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DEPARTMENT OF THE AIR FORCE
27TH SPECIAL OPERATIONS MISSION SUPPORT GROUP (AFSOC)
CANNON AIR FORCE BASE NEW MEXICO

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Hazardous Waste Bureau

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Dear Mr. Kieling

Cannon Air Force Base is pleased to submit the "*SWMU 85, 95, and 96 RFI Report*". If you have any questions regarding this submittal, please contact Mr. Ronald A. Lancaster, Chief, Installation Management Flight at (575) 784-1146.

Sincerely

DOUGLAS W. GILPIN, Colonel, USAF

Attachment:
SWMUs 85, 95, and 96 RFI Report

cc:
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RCRA FACILITY INVESTIGATION AT SD012, SD017, and SD020

CANNON AIR FORCE BASE
NEW MEXICO
RCRA PERMIT No. NM7572124454

Performance Based Remediation
Contract Number: FA8903-13-C-0008

Prepared for

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September 2016

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Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AFB	Air Force Base
bgs	below ground surface
Base	Cannon Air Force Base
B.P.	before the present
BRA	Baseline Risk Assessment
CAC	Corrective Action Complete
CEC	cation exchange capacities
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm	centimeter
cm/sec	centimeters per second
CoC	chain of custody
COC	chemical of concern
COPC	chemical of potential concern
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
EMAX	EMAX Laboratories, Inc.
FPM	FPM Remediations, Inc.
gal/ft	gallons per foot
gpm	gallons per minute
GRO	gasoline range organics
HQ	hazard quotient
IDW	investigation-derived waste
IRP	Installation Restoration Program
km/hr	kilometers per hour
L/min	liters per minute
m^3/m	cubic meters per meter
MCL	maximum contaminant level
µg/kg	micrograms per kilogram

mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
NMED	New Mexico Environment Department
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SCEM	site conceptual exposure model
SCFS	Sample Collection Field Sheet
SD012	Storm Water Collection Point (South Playa) (SWMU 85)
SD017	Old Entomology Rinse Area (SWMU 96)
SD020	NE Storm Water Drainage Area (SWMU 95)
SSL	soil screening level
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
TAL	total analyte list
TPH	total petroleum hydrocarbon
URS	URS Group, Inc.
US	United States
USEPA	United States Environmental Protection Agency
UTL	upper tolerance limit
VOC	volatile organic compound

1.1 AUTHORITY

URS Group, Inc. (URS), as a subcontractor to FPM Remediations, Inc. (FPM), has been contracted by the Air Force Civil Engineer Center under Contract Number FA8903-13-C-0008, Delivery Order 0001, to complete a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at the following sites at Cannon Air Force Base (AFB):

- Storm Water Collection Point (South Playa) (SD012) (Solid Waste Management Unit [SWMU] 85)
- Old Entomology Rinse Area (SD017) (SWMU 96)
- NE Storm Water Drainage Area (SD020) (SWMU 95)

This RFI is being completed under the Environmental Restoration Program for Cannon AFB. The location of Cannon AFB is depicted on **Figure 1-1**. The location of these sites at Cannon AFB is provided on **Figure 1-2**.

1.2 PURPOSE AND SCOPE

The purpose of this RFI was to reevaluate the arsenic contamination identified at these sites to determine if the arsenic is naturally occurring or the result of historical usage at these sites. The scope of the RFI was to complete a background study for arsenic and, if necessary, collect additional data from each site to facilitate a statistical analysis of the arsenic concentrations in the soils. This RFI describes the fieldwork completed in accordance with the approved scope of work (FPM/URS 2015a) at these arsenic sites.

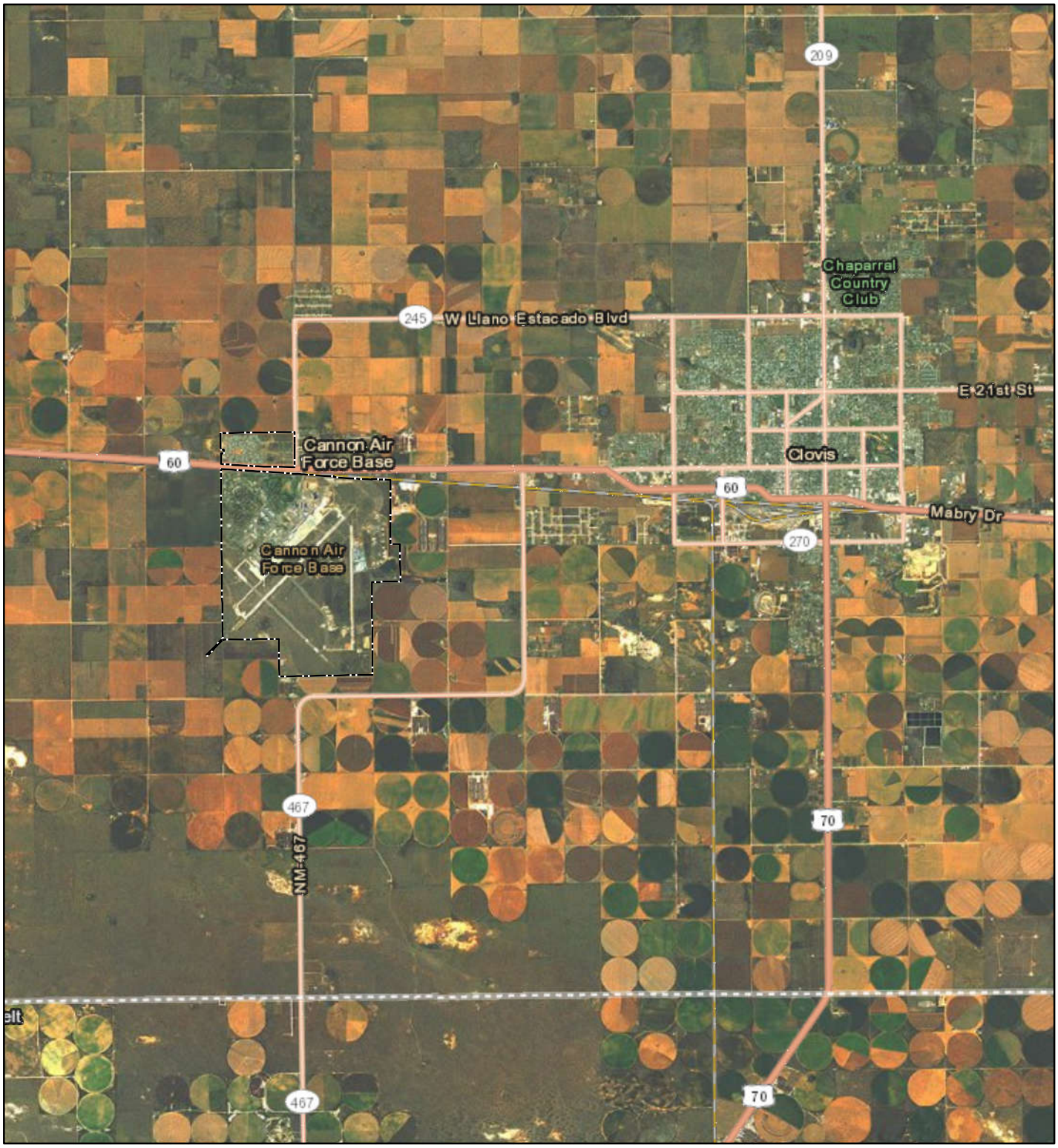
1.3 REPORT ORGANIZATION

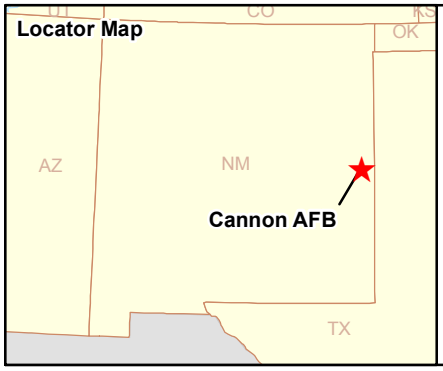
This report provides the facility and site descriptions, presents the project objectives and approach, describes the field sampling activities completed, presents the site investigation results, and provides summaries and recommendations for SD012, SD017, and SD020. This report is organized as follows:

- **Section 1** provides an introduction, purpose and scope, and report organization.
- **Section 2** provides the overall facility description, site descriptions and background information, and results from previous investigations.
- **Section 3** provides the project objectives and approach.
- **Section 4** describes field sampling procedures used to complete the RFI field activities.
- **Section 5** provides investigation results and screening-level risk evaluations.
- **Section 6** provides a summary and recommendation for each arsenic site.
- **Section 7** includes a list of the references used to produce this report.

The appendices contain the following information:

- **Appendix A** contains a copy of the New Mexico Environment Department (NMED) approval with modifications letters (NMED 2015b and 2016).
- **Appendix B** contains field documentation (i.e., boring logs and sample collection field sheets [SCFSs]).
- **Appendix C** contains the analytical data, laboratory results, field duplicate results, data reviews, qualified data table, and chain of custody (CoC).
- **Appendix D** contains investigation-derived waste (IDW) documentation (i.e., waste profile sheet, laboratory results, and disposal forms).
- **Appendix E** contains the data and tables utilized to complete the risk assessment.





Legend

Base Boundary

N

10,000 5,000 0 10,000 Feet

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

Installation Location Map
Cannon Air Force Base, New Mexico

Drawn By:	Date:	Project No.	
DPG	3/7/2014	23446539	Figure 1-1
Checked By: MS	Revision: 0		

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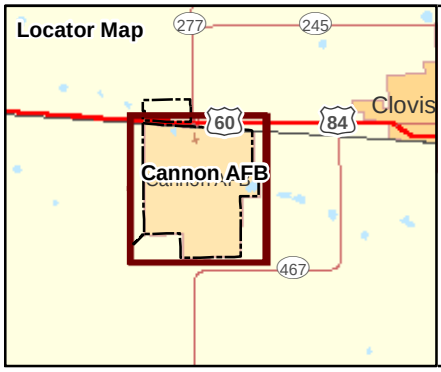

Legend

Base Boundary
Site Boundary

Site ID	Site Name
SD012	Stormwater collection point
SD017	Old Entomology rinse point
SD020	NE stormwater drainage area

N

2,000 1,000 0 2,000 Feet

Site Location Map
Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No. 23446539	Figure 1-2
Checked By: MS	Revision: 0		

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This section provides the overall facility description, site descriptions and background information, and results from previous investigations.

2.1 FACILITY DESCRIPTION

2.1.1 Setting – Physical Geography

Cannon AFB is situated in the Southern High Plains Physiographic Province in the Llano Estacado subprovince. The Llano Estacado is a nearly flat plain sloping gently (10 to 15 feet per mile) to the east and southeast. Elevations in the eastern New Mexico portion of the Llano Estacado exceed 4,000 feet above mean sea level (msl). In the vicinity of Cannon AFB, elevations range from 4,250 feet to 4,350 feet above msl.

The most prominent geomorphic features in the vicinity of Cannon AFB are blowouts and broad, widely spaced valleys. Less common landforms are relict sand dunes located along the northern side of the Portales Valley to the south of Cannon AFB. Relict dunes are not found on or near Cannon AFB.

Blowouts are broad shallow depressions which form as the result of soil eroded by wind. Blowouts commonly collect surface runoff from small to moderate sized drainage areas. During periods of rainfall, runoff collects in blowouts to form ephemeral playa lakes. Playas have no external surface drainage. Water is lost by infiltration to the soil and evaporation; without recharge, playa lakes persist for only a few days or weeks. Three playas are located within Cannon AFB, and several more are found to the north and east of Cannon AFB.

Stream valleys tend to be fairly broad and widely spaced. Streams are ephemeral and drainages are poorly developed. No streams exist on or near Cannon AFB. Running Water Draw and Frio Draw (located about 10 and 20 miles, respectively, north of Cannon AFB) are the nearest streams. These are second-order streams. Both streams are very straight, flow southeast, and have rectilinear drainage patterns with short laterals (W-C 1991).

2.1.2 Demographics and Land Use Near Cannon AFB

Cannon AFB is located just west of the City of Clovis, New Mexico, and just south of United States Highway 60/84 in a farming and ranching area. The majority of the land surrounding Cannon AFB is productive, irrigated farmland or grassland. The major crops are wheat, sorghum, sugar beets, corn, cotton, alfalfa, barley, and peanuts. The land is also used for cattle grazing, both beef and dairy. According to 2010 United States (US) census data (US Census 2010), the population of Clovis was 37,775 while the population of Cannon AFB was 2,245.

2.1.3 Climatology

The climate of east-central New Mexico is classified as tropical semi-arid, with summer temperature and precipitation maxima. Average monthly temperatures range from a January low of –3.9 degrees Celsius (°C) (25 degrees Fahrenheit [°F]) to a July high of 32.8°C (91°F)

(US Climate Data 2013). Extreme daily temperatures range from a historical low of –24°C (–11°F) to a historical high of 41°C (106°F) (My Forecast 2013). Average monthly precipitation ranges from 1.2 centimeters (cm) (0.39 inches) in February to 8.7 cm (3.43 inches) in July (US Climate Data 2013). The maximum-recorded 24-hour rainfall was 12.2 cm (4.8 inches), which occurred in the month of August. Rainfall occurs on average eight days per month during the summer (My Forecast 2013). The mean annual precipitation is approximately 47 cm (18.51 inches) (US Climate Data 2013). The mean annual evapotranspiration rate is 285.9 centimeters per year (112.56 inches per year) (USEPA 2013). Prevailing winds are from the southwest. Average wind speed is highest at an average of 23.34 kilometers per hour (km/hr) (14.5 miles per hour) during the month of April (USDA 2013).

The atmosphere around the area of Cannon AFB is generally well mixed. The seasonal and annual average mixing heights can vary from 400 meters in the morning to 4,000 meters in the afternoon. The afternoon mixing heights are typically greater during the spring and fall seasons. The morning mixing heights are usually low, due to nighttime heat loss from the ground, producing surface-based temperature inversions. After sunrise, these inversions break up and solar heating of the earth's surface causes vertical mixing in the atmosphere.

Dust is frequently entrained into the atmosphere in this region of the country because of gusty winds and the semiarid climate. The Texas Panhandle-eastern New Mexico area is considered the worst area in the United States for windblown dust. Occasionally, this windblown dust is of sufficient quantity to restrict visibility. Most of the seasonal dust storms occur in March and April, when the wind speeds are typically high (i.e., average 5 km/hr) (3.1 miles per hour) (W-C 1991).

2.1.4 Geology

A generalized geologic section at Cannon AFB is shown on **Figure 2-1**. The near surface stratigraphic units of interest at Cannon AFB are the Late Miocene-Late Pliocene-age Ogallala Formation and the Early Triassic Dockum Group.

The Dockum Group consists of three formations. Stratigraphically, the lowest unit is the Santa Rosa Sandstone. Overlying the Santa Rosa Sandstone are the Chinle and Redonda Formations. The Chinle and Redonda Formations are composed mainly of red shales with lesser interbedded sands, and are known locally as "redbeds." The top of the Dockum Group is marked by an erosional nonconformity having relief of up to several hundred feet (Lee Wan 1990).

Overlying the Dockum Group redbeds is the Ogallala Formation. The Ogallala Formation extends from eastern New Mexico and Colorado into Texas, Oklahoma, Kansas, Nebraska, and South Dakota. Drillers' logs from Cannon AFB indicate that the Ogallala Formation varies from 360 feet to 415 feet in thickness. The incised upper surface of Triassic redbeds strongly influences Ogallala thickness. Paleo valleys in the post Triassic nonconformity are deep and trend dominantly east to west. Ogallala thickness may vary significantly over short north to south distances (Lee Wan 1990).

The Ogallala Formation is erosionally truncated to the south along the abandoned Portales Valley, to the west along the Pecos River Valley, and to the north in a series of ephemeral stream valleys. The Ogallala Formation extends more than 125 miles to the east before terminating as an escarpment in Briscoe County, Texas. Springs and seeps are common along the erosional margins of the Ogallala.

The Ogallala Formation dips gently and monoclinally to the southeast in the vicinity of Cannon AFB. Data suggest that some quaternary warping may have occurred; however, most of these structures are located well to the northwest and southwest of Cannon AFB. No faults or buried structural lineaments are known to exist in the vicinity of Cannon AFB (Lee Wan 1990).

The Ogallala Formation is composed of unconsolidated poorly sorted gravel, sand, silts, and clays. The base of the Ogallala is generally marked by a gravel, cobble, and boulder deposit. This basal member contains sediments derived from igneous and sedimentary rocks transported from the mountains to the west. The Ogallala Formation was laid down as stream and overbank deposits formed within coalescing alluvial fans. These fans form a broad pediment along the eastern flank of the Rocky Mountains. As is typical of alluvial deposits, Ogallala internal stratigraphy varies vertically and horizontally over short distances.

Except where strongly cemented by calcium carbonate (caliche), the sediments of the Ogallala are loose and friable. Authigenic and allogenic clays are found as a trace to abundant matrix mineral. Five zones have been distinguished within the Ogallala of east central New Mexico on the basis of clay minerals. Smectites (montmorillonites) and attapulgite (with sepeotite) are the dominant clays throughout the Ogallala. Illite is a lesser, but persistent clay, as is kaolinite. Smectite is a swelling clay, causing deep cracks to form in dry surface soils. Smectite in particular and, to a lesser extent, attapulgite and illite, are clays with moderate to high cation exchange capacities (CEC). The formation as a whole should therefore have a relatively high CEC, which should inhibit the migration of charged contaminants, and especially ionic forms of metals (Lee Wan 1990).

Caliche is a major feature of the Ogallala Formation, occurring as nearly continuous to discontinuous layers throughout. Caliche is hard, white to pale tan on fresh surfaces, weathering to gray, and has a chalky appearance. Caliche forms as calcium carbonate, leached from overlying sediments, and precipitates in the pore space of the host sediments. Precipitation is caused by the evaporation of downward percolating water. The caliche may thus mark the position of ancient vadose zones. Radiocarbon dates for the upper “climax” caliche range from approximately 27,000 years before the present (B.P.) to approximately 42,000 years B.P. (Lee Wan 1990).

Caliche is relatively soluble in acidic water (i.e., water with a pH less than 7) or in waters containing dissolved carbon dioxide. The top surface of the uppermost or “climax” caliche in a fresh outcrop typically shows solution etching.

The Ogallala has numerous continuous to discontinuous caliche layers throughout its thickness. The climax caliche is pisolitic (i.e., consisting of spherical concentrically laminated aggregates 1 to 10 millimeters in diameter) (Lee Wan 1990). The pisolites are thought to have formed as the

caliche was repeatedly chemically weathered and brecciated during Pleistocene pluvials (wet climate episodes) and later recemented during drier intervals. This upper caliche crops out around playas and the bounding escarpments of the Ogallala, and is locally termed "caprock." The climax caliche is typically 3 to 5 feet thick. Caliches that occur lower in the Ogallala are platy and harder. Caliche may be thin or absent below playas (W-C 1991).

2.1.5 Hydrogeology

The lower portion of the Ogallala Formation is the primary regional aquifer for both potable and irrigation water. No deeper aquifers are utilized in the vicinity of Cannon AFB. The Ogallala aquifer is part of the High Plains Aquifer that extends continuously from Wyoming and South Dakota into New Mexico and Texas. In east-central New Mexico, the Ogallala aquifer rests on Dockum Group redbeds, which serve as the basal confining layer. The Ogallala is a water table, or unconfined, aquifer. The Ogallala aquifer has a southeasterly regional gradient of about 17 feet per mile (0.0032 meters per meter, see **Figure 2-2**). Well yields vary from less than 1 gallon per minute (gpm) in thin silts and sands to 1,600 gpm in thick sands and gravels. Water quality is generally good, with hardness and fluorides being somewhat high (Lee Wan 1990).

Based on data from the 2014 base-wide sampling event, the depth to groundwater at Cannon AFB varies from 287 to 350 feet below ground surface (bgs) (FPM/URS 2015b). Saturated thickness is influenced by the configuration of the erosional nonconformity surface marking the top of the Dockum Group. The local groundwater gradient is southeasterly at 7.5 feet per mile. Yields in tests of Cannon AFB water wells have ranged from 776 liters per minute (L/min) (205 gpm) to 4,353 L/min (1,150 gpm). Specific capacities range from 0.14 cubic meters per meter (m^3/m) (11.4 gallons per foot [gal/ft]) to 0.35 m^3/m (27.9 gal/ft) (Lee Wan 1990).

Rough estimates of hydraulic conductivity were calculated from well pump tests in water wells 5 and 9 (**Figure 2-3**) using the Theis equation. An estimate of hydraulic conductivity for water well 8 was based on water level recovery data using the Bouwer and Rice approach (Lee Wan 1990). The data used in these calculations were obtained to evaluate pump rates, efficiency, and well yield, and were not intended for use in calculating aquifer properties. The results of these calculations should therefore be considered as approximations.

Hydraulic conductivity values for water wells 5 and 9 were approximately 2.0E-03 centimeters per second (cm/sec). Calculations for water well 8 resulted in a hydraulic conductivity of 2.0E-02 cm/sec. In addition, slug testing of two monitoring wells (MW-O and MW-N) was completed by Woodward-Clyde (W-C) in February 1995 (W-C 1995). The estimated hydraulic conductivities from these slug tests were both 3.0E-03 cm/sec. These estimates appear to be low when compared to published hydraulic conductivity data for sands and gravels. As reported in Lee Wan (1990), a groundwater flow velocity of about 4.5E-01 meters per year (1.5E-02 feet per year) has been estimated. This corresponds to a hydraulic conductivity of approximately 1.4E-04 cm/sec, which appears to be low when compared with published data (Freeze and Cherry 1979).

The presence of interstitial clays may account for both the variability and the low values of hydraulic conductivities. Boring logs from Cannon AFB projects and published reports

(Lee Wan 1990) indicate that interstitial and interstratified clays are abundant in the Ogallala Formation.

Recharge to the Ogallala is primarily through precipitation. A recharge rate of 0.5 inches/year was calculated using the Theis equation; the recharge rate may be as much as 1.0 inch/year. Due to the high evapotranspiration rate and low precipitation, recharge is most likely limited to heavy rainfall events in which the infiltration capacity of the soil is exceeded and runoff occurs, or during cool months when precipitation exceeds evapotranspiration. Excess runoff flows to playas, and the presence of water in playas may allow deep percolation to the aquifer. The occurrence of this process is evidenced by the presence of clay deposits in, and thin or nonexistent caliche layers directly below, playas. Caliche is soluble in acidic rainwaters, and is leached over time to form percolation pathways (Lee Wan 1990).

Discharge from the Ogallala occurs through well pumping and springs along the eroded margins of the formation. Spring discharge does not occur on or near Cannon AFB. Domestic and irrigation water wells are common on and around Cannon AFB. However, the rate of discharge exceeds the rate of recharge. Water levels in the Ogallala have declined steadily from the 1930s to the present. A decline of 50 to 100 feet has been observed in the area around Clovis, New Mexico for the period from the 1930s to 1980. The largest area of water level decline exceeding 100 feet occurs south of the Canadian River extending from Curry County, New Mexico to Crosby County, Texas (Lee Wan 1990).

The dominant uses of groundwater in the Cannon AFB area are as potable and irrigation water. Numerous wells are found in the Cannon AFB area, most of which provide only irrigation water (**Figure 2-3**).

The Ogallala will continue to be used as the primary source of potable and irrigation water for eastern New Mexico. The New Mexico State Engineer designated Curry County as a Water Basin in 1989. This designation allows for regulation of water rights, usage, and well drilling (W-C 1991).

2.1.6 Soils

Soils in the vicinity of Cannon AFB are classified as silty sand (SM) to clayey sand (SC) under the Unified Soil Classification System, and as aridisols (calciorthids) under the Soil Conservation Service Comprehensive Soil Classification System. The following summary is based on the Soil Conservation Service Curry County Soil Survey (Lee Wan 1990).

The most common soil type on Cannon AFB is the Amarillo fine sandy loam, 0- to 2-percent slope phase (map symbol Ab on **Figure 2-4**). This soil consists of a thin sandy A horizon, well-defined clayey B1-3 horizons, with a calcic B3 horizon at depths below 40 inches. The calcic B3 horizon lies on a calcic C horizon, or on caliche. The Amarillo fine sandy loam is present on all relatively flat surfaces at Cannon AFB, but is also found on slopes associated with playas (map symbol Ac).

Clovis fine sandy loams, 0- to 2-percent slope phase (map symbol Cb) and 2- to 5-percent slope phase (map symbol Cc), are very similar to Amarillo fine sandy loams. In the Clovis soils, the depth to the calcic C horizon ranges from 28 to 56 inches. The depth to caliche exceeds 56 inches. Clovis and Amarillo fine sandy loams occur in close association.

In a few limited areas, particularly along the steeper slopes around playas, Mausker fine sandy loam, 0- to 2-percent slope phase (map symbol Ma), and 2- to 5-percent phase (map symbol Mb) are found. Mausker fine sandy loams have no B horizons and are very calcareous. The calcic C horizon is within 2 feet of the surface.

The A and B horizons of Amarillo and Clovis fine sandy loams are rapidly to moderately permeable. Mausker fine sandy loam A and Ac horizons are rapidly permeable. Permeabilities in calcic B and C horizons are moderate (Lee Wan 1990).

2.1.7 Background Metal Concentrations in Soil

The natural soils in the vicinity of Cannon AFB are alkaline and generally rich in metals. Typically high concentrations of aluminum, iron, magnesium, manganese, and potassium combine with elevated levels of many other metals in the natural soils. Calcium is naturally present in the soils at levels up to nearly 2.00E+05 milligrams per kilogram (mg/kg). Tightly cemented layers of caliche are present in several horizons in the natural soils and the Ogallala aquifer below. The Ogallala Formation as a whole should have a relatively high CEC, which should, in turn, inhibit the migration of charged contaminants, especially the ionic forms of metals.

The background levels of inorganic compounds in surface and subsurface soil at Cannon AFB are presented in **Table 2-1** in the form of a mean value and statistical information on the ranges encountered for each element. **Table 2-1** has been adapted from a final report dated September 1997 entitled "Naturally Occurring Concentrations of Inorganics and Background Concentrations of Pesticides at Cannon Air Force Base, New Mexico" (W-C 1997). This report summarizes background data for soil from numerous past investigations in the vicinity.

The upper tolerance limits (UTLs) presented in **Table 2-1** will be the background levels used in the screening of surface and subsurface soil chemical results for this RFI. This table has been updated to reflect the background concentrations calculated for arsenic and thallium as described in **Section 5.2** of this RFI.

2.1.8 Water Quality

The groundwater quality at Cannon AFB is generally good, with dissolved solids ranging from 2.50E+02 to 5.00E+02 milligrams per liter (mg/L) (Gutentag, et al. 1984) and fluorides ranging from 2.2E+00 to 2.7E+00 mg/L (William Matotan and Associates, Inc. 1985).

2.2 STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012) (SWMU 85)

2.2.1 Site Description and Background

SD012 is a naturally occurring 9-acre playa lake located in the southwestern part of Cannon AFB (**Figure 2-5**). Since 1943, stormwater runoff from the flightline has collected in this lake. Stormwater runoff flows toward the center of the site where it either evaporates or percolates into the soil.

2.2.2 Previous Investigation Results

2.2.2.1 1986 IRP Phase II (Radian 1986)

The Installation Restoration Program (IRP) Phase II included drilling and sampling eight borings at depths of 1 and 5 feet bgs. Samples were analyzed for metals, oil and grease, and volatile organic compounds (VOCs). No VOCs were detected in any of the samples and only one sample contained a low concentration of oil/grease. Metal concentrations were generally within background range; however, the soil boring sample collected in the deepest portion of the basin seemed to contain the highest concentrations of metals. Further investigation was recommended to evaluate the potential concentration of heavy metals toward the center of the basin.

2.2.2.2 1990 Remedial Investigation (Walk Haydel 1990)

In addition to three borings drilled as part of the IRP Phase II Stage 1 (Radian 1986), the Final IRP Remedial Investigation (RI) for SD012 included drilling and sampling eight soil borings (Walk Haydel 1990). Soil samples were collected from depths of 5 to 70 feet bgs. Near surface and subsurface samples were analyzed for VOCs, base/neutral extractable compounds, and for total and extraction procedure toxicity metals. Barium, mercury, and selenium were detected in several samples in concentrations slightly above area background levels during the RI (Walk Haydel 1990).

A human health screening was completed for SD012. The conclusion of the human health screening was that metals concentrations at SD012 are indicative of background metals concentrations (Walk Haydel 1990). Ecological screening at SD012 concluded that selenium was present in concentrations considered toxic to wildlife, but these concentrations are within the range of normal background concentrations (Walk Haydel 1990).

2.2.2.3 Initial RFI (URS 2007)

The results and conclusions of the SD012 RI and risk screening were reviewed and compared to current NMED soil screening levels. The RI analytical results, with a current evaluation, were presented to the NMED RCRA section in the RFI Report. URS completed a preliminary risk screening of this site following current NMED guidance. The results of the screening were presented in further detail in the RFI report.

The results of previous investigations (**Table 2-2, Table 2-3,** and **Figure 2-5**) were reviewed as part of the RFI and the conclusions for SD012 were presented in the RFI report (URS 2007). The RFI review indicated that arsenic results exceeded the current NMED residential soil screening levels in surface and subsurface soil samples. However, it is plausible that the elevated concentrations and elevated reporting limits associated with the arsenic data in the RI (Walk-Haydel 1990) may be attributable to inter-element interference that was not properly accounted for during laboratory analysis and may not be representative of site conditions. The RFI report was reviewed by NMED, and based on NMED comments regarding arsenic levels, additional sampling at SD012 was suggested to further characterize the site.

2.2.2.4 RFI Addendum (URS 2010)

RFI Addendum fieldwork was completed, which consisted of collecting one surface soil sample and completing two soil borings (**Table 2-4, Table 2-5, and Figure 2-5**). The surface soil sample (C85-SS01) was collected from 0 to 0.5 feet bgs with a stainless steel hand auger near the large concrete pile in the middle of the stormwater collection point due the presence of water. The two soil borings (C85-SB01 and C85-SB02) were advanced to depths of 15 feet bgs. Samples were collected and analyzed for arsenic to determine if the elevated concentrations and elevated reporting limits associated with the arsenic data in the RI (Walk-Haydel 1990) may be attributable to inter-element interference that was not properly accounted for during laboratory analysis and may not be representative of site conditions. With the exception of one arsenic level (6.0 mg/kg), which slightly exceeded Cannon AFB background level (4.3 mg/kg) (**Table 2-1**), and the residential soil screening level (SSL) (3.9 mg/kg) in the 0 to 0.5 feet bgs interval at surface soil location SS01 (collected under water), no elevated arsenic concentrations were identified.

Based on the RFI Addendum 2008 sample results, the RI data was considered invalid since previous arsenic data in the RI (Walk-Haydel 1990) may be attributable to inter-element interference. Because the maximum arsenic concentration detected during the RFI (6.0 mg/kg) was above the residential NMED SSL, but below the industrial NMED SSL (17.7 mg/kg) Corrective Action Complete (CAC) with controls was appropriate for SD012. Site SD012 is listed on Table 2 (CAC with controls) of the current RCRA permit.

2.3 OLD ENTOMOLOGY RINSE AREA (SD017) (SWMU 96)

2.3.1 Site Description and Background

SD017 was located behind Building 2160, pesticide storage building, which was abandoned in October 1983 and demolished in September 1984 (**Figure 2-6**). During the site's use, pesticide and herbicide application equipment was cleaned in a sink located inside Building 2160. The sink drained into a 3-foot-square and 2-foot-deep pit at the rear of the building. The bottom of the pit was reported to be unlined and open to the soil (W-C 1992).

The IRP Phase II investigation for SD017 detected potentially significant concentrations of pesticides and herbicides in samples collected from two soil borings (Radian 1986). An IRP

Phase IV-A investigation of SD017 (Walk Haydel 1990) was completed to confirm and delineate the potential contamination detected during the IRP Phase II investigation. During this investigation, eight soil borings were drilled and sampled. Four soil borings were drilled to 50 feet bgs, and four were drilled to 100 feet bgs. The Phase IV-A investigation did not detect herbicides and only detected pesticides at concentrations of potential concern in samples collected near the ground surface.

An RI (W-C 1992) included collection and analysis of one surface soil sample and one groundwater sample. The surface soil sample was collected at the approximate location of the sink rinse pit. The results of the RI were used to complete a Baseline Risk Assessment (BRA). The pesticides dichlorodiphenyldichloroethylene (4,4-DDE), dichlorodiphenyltrichloroethane (4,4-DDT), alpha- and gamma-chlordane, and heptachlor epoxide were identified as chemicals of potential concern (COPCs). No unacceptable non-carcinogenic or carcinogenic human health risks were identified for the site. No pesticides or polychlorinated biphenyl (PCBs) were detected in groundwater, and none of the inorganic chemical concentrations detected in groundwater exceed a maximum contaminant level (MCL). The chemicals of potential ecological concern at SD017 were determined not to exceed background concentrations for the ecological risk screening; therefore, no unacceptable ecological risk was identified.

A supplemental RI was also completed for SD017 to address current conditions at the sink rinse pit (W-C 1994). One soil boring was drilled to a depth of 102 feet bgs, and samples were collected at 10-foot intervals. Ten subsurface samples were collected and analyzed for VOCs, semivolatile organic compound (SVOCs), total analyte list (TAL) metals, pesticides/PCBs, chlorinated herbicides, total recoverable petroleum hydrocarbons, gasoline range organics (GRO), and total chromatographical organics. Two pesticides, 4-4-DDE and 4,4-DDT, were detected at estimated concentrations below the laboratory reporting limits in the sample from 10 feet bgs. Detected metals were within background ranges.

2.3.2 Previous Investigation Results

2.3.2.1 IRP Phase II – Confirmation/Quantification Stage I (Radian 1986)

Three soil borings (ST-1, ST-2, and ST-3) were drilled to depths of approximately 60 feet bgs and analyzed for arsenic, mercury, herbicides, pesticides, and VOCs. Low concentrations of dichlorodiphenyldichloroethane (4,4-DDD), 4,4-DDE, 4,4-DDT, dieldrin, and toxaphene were detected at the 2 to 4 feet bgs depth interval and the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) was also detected at 5 feet bgs.

2.3.2.2 IRP Phase IV-A (Walk, Haydel & Associates 1990)

Eight soil borings were drilled by Walk, Haydel and Associates during the Phase IV-A investigation of SD017, and one 356-foot deep well was installed downgradient of the site. The borings were sampled in 10-foot intervals to a total depth of 100 feet. The pesticides 4,4-DDE, 4,4-DDD, 4,4-DDT, and chlordane were detected in the first foot. Only one boring, located near the open pit adjacent to building 2160, showed pesticides to a depth of 6 feet bgs. No herbicides

were detected. Based on these data it was concluded that conditions at the site were not conducive to downward contaminant migration.

2.3.2.3 RI for 18 SWMUs (W-C 1992)

The objective of the RI was to provide additional information regarding the nature and extent of contaminants. One surface soil sample was analyzed for PCBs and pesticides and one monitoring well sample was collected and analyzed for PCBs, pesticides, and TAL metals. The data were used to further evaluate the extent of potential contamination and to perform a BRA to determine if the area poses risk to human health or the environment. Low concentrations (micrograms per kilogram [µg/kg] range) of the pesticides 4,4-DDE, 4,4-DDT, alpha chlordane, gamma chlordane, and heptachlor epoxide were detected in the soil sample collected adjacent to the concrete foundation for Building 2160. Six metals were detected in the groundwater sample and compared with established MCLs for groundwater quality standards. Only lead slightly exceeds the MCL; however, there was no indication that groundwater has been adversely impacted by activities at the old entomology rinse area because no pesticides or PCBs were identified in the groundwater sample.

The chemicals of concern for the NE Storm Drainage Area (SD020), Old Entomology Rinse Area (SD017), and the two wastewater lagoons (SL101 and WL102) were combined and evaluated as RAA3 in the BRA. The chemicals of concern identified for the combined RAA were: toluene, barium, cadmium, chromium, cobalt, lead, mercury, nickel, zinc, 4,4-DDE, 4,4-DDT, chlordane, and heptachlor epoxide. None of the compounds exceeded the RFI soil/criteria/proposed RCRA levels. Cobalt and lead did not have published toxicity values for development of RCRA action levels but were qualitatively evaluated. Noncarcinogenic hazard indices and carcinogenic health risks were calculated for the current and future maintenance worker, future construction worker, and hypothetical adult and child resident. The hazard indices were below the United States Environmental Protection Agency (USEPA) level of concern (1) indicating that no adverse health effects are anticipated for these receptors. The lifetime excess cancer risks were within or below the target risk range of 1E-06 to 1E-04 for all receptors.

The ecological risk assessment also identified cadmium, chromium, cobalt, copper, lead, and zinc as metals of concern in soil. No organic chemicals of concern were identified in soil. The metals are of most concern to ground-dwelling organisms; therefore, the focus of the ecological risk assessment was on the exposure of small mammals to chemicals in soil. The risks to small ground-dwelling rodents and species of concern that may feed on small mammals were evaluated. Only chemicals considered to be above background and potentially related to site activities were evaluated. Based on the calculation of toxicity values for a mouse from incidental soil ingestion, none of the six metals are considered to pose a risk to small mammal populations through direct exposure. Also, none of six metals are thought to bioaccumulate through the food chain to levels that would pose a risk to higher trophic organisms. No unacceptable human health or ecological risks due to chemical releases were expected from SD017 and no further action (NFA) was recommended.

Impacts to groundwater were considered minimal because the depth to groundwater is greater than 287 feet and soil sampling results demonstrated that contaminants are not being transported significantly in a vertical direction.

2.3.2.4 Supplemental RFI (Woodward-Clyde 1994)

The objective of the Supplemental RFI was to collect additional data requested by USEPA to define the deeper soil beneath the suspected rinse sink pit location. One soil boring was drilled to 102 feet and samples were collected at 10-foot intervals starting at 10 feet bgs. The soil samples were analyzed for VOCs, SVOCs, PCBs, TAL metals, total petroleum hydrocarbons (TPH), and pesticides. Two pesticides (4,4-DDE and 4,4-DDT) were detected at 10 feet bgs in the duplicate samples but were not detected from 10 to 100 feet bgs. The concentrations of pesticide are lower than the RCRA corrective action levels and lower than concentrations detected at other SWMUs, which were not related to pesticide use. Low concentrations of acetone, methylene chloride, toluene, and TPH were detected at multiple depths, at levels well below the corrective action levels and attributed to laboratory contamination. Seventeen metals were detected within the range of naturally occurring background levels.

2.3.2.5 Reevaluation Results (URS 2007)

Maximum soil concentrations for all detected chemicals were compared with NMED SSLs for surface soil, combined soils, and groundwater, respectively (**Table 2-6, Table 2-7, Table 2-8,** and **Figure 2-6**). None of the pesticides or metals detected above the reporting limits exceeded the industrial or construction worker SSLs. Arsenic and mercury in combined soil exceeded the soil-to-groundwater SSL; however, impacts to groundwater are considered minimal because the depth to groundwater is greater than 287 feet, downgradient groundwater was not impacted, and soil sampling results demonstrated that soil contaminants were not being transported significantly in a vertical direction.

Although arsenic concentrations exceeded the residential SSL, arsenic was not considered a COPC in soil for SD017 based on the following.

- SD017 was an unlined rinse water pit associated with Building 2160, a pesticide storage building. The pit was demolished when the building was razed in 1984. Therefore, there is no longer an active source. During the demolition activities the surface soil around the pit would have been disturbed, graded and potentially covered over by surrounding soil.
- Arsenic was detected at a concentration (5.6 mg/kg) slightly above background levels (4.3 mg/kg for subsurface soil) for Cannon AFB, indicating that SD017 was not a hotspot associated with activities at the former pesticide storage area.
- Soil concentrations were compared to the residential SSLs. The NMED Risk Assessment Guidance for Site Investigations (NMED 2015a) states that residential receptors (and commercial/industrial receptors) are typically exposed only to surface soils (ground surface to a depth of 2 feet bgs). Construction workers are typically the only receptor considered to be exposed to soils at a depth of greater than 2 feet bgs. USEPA's Risk Assessment Guidance for Superfund (USEPA 1989) also recommends these soil horizons for residential,

commercial/industrial, and construction worker receptors. This is a highly conservative comparison because SWMU 96 is a very small site, less than 10 square feet. Therefore, it would be unlikely that any receptor would be exposed to the site maximum concentrations for any extended period of time, such as the assumed daily residential exposures (350 days per year for 30 years) used to calculate the residential SSL. Additionally, the concentration of arsenic that exceeds the residential SSL was detected in subsurface soil and is unlikely to represent concentrations to which residential receptors would be exposed at the site.

- Only reasonable and predictable land use scenarios should be evaluated as described in USEPA Office of Solid Waste and Emergency Response Directive 9355-7.04. Commercial/industrial land use at Cannon AFB is reasonable and predictable for current and future land use. The site is surrounded by industrial use areas and there are no plans to develop the site. If the land use were to change, then the risk assessment would be re-visited at that time.

Based on the evaluation of site concentrations, the locations of detected concentrations, and potential receptors, the site was recommended for CAC without controls. A response received from NMED on May 14, 2008 indicated that SD017 could be recommended for CAC with controls. The site could not be recommended for CAC without controls due to the presence of arsenic in the soils. SD017 is listed on Table 2 (CAC with controls) on the current RCRA permit.

2.4 NE STORM WATER DRAINAGE AREA (SD020) (SWMU 95)

2.4.1 Site Description and Background

SD020 is a shallow, open ditch that begins near the end of the northeastern runway, Runway 4/22, and extends to the southeast under an access road before emptying into an open field (**Figure 2-7**). The northwest end of the ditch is marked by a concrete culvert and is surrounded by heavy vegetation. The drainage ditch is approximately 40 feet wide and runs for approximately 550 feet until it reaches the field.

2.4.2 Previous Investigation Results

2.4.2.1 1990 Remedial Investigation (Walk Haydel 1990)

The site was investigated during a Final IRP RI (Walk Haydel 1990). The investigation included drilling and sampling of eleven soil borings. Soil samples were collected from depths that ranged from 5 to 61.5 feet bgs. Samples were analyzed for total metals, extraction procedure toxicity characteristics, VOCs, and base/neutral extractable compounds. Long chain organic compounds were detected at a shallow depth in one soil boring near the northwest end of the drainage ditch. Selenium and barium were detected in concentrations above area background concentrations, but within the range of concentrations typical of area soils.

2.4.2.2 RI for 18 SWMUs (W-C 1992)

An RI (W-C 1992) was completed at SD020. Two soil borings were drilled and sampled to depths of 10 feet bgs. The soil borings were located near the upstream end of SD020 to evaluate possible contaminant contributions from areas upstream of the already sampled reach of the ditch. Samples were analyzed for VOCs, SVOCs, TAL metals and TPH. A BRA was completed based on data collected during the RI (W-C 1992). Lead and zinc were identified as the only COPCs for human health risk evaluation. Calculations of noncarcinogenic and carcinogenic risks to human health indicated no unacceptable risk. No unacceptable ecological risks were identified.

2.4.2.3 Initial RFI (URS 2007)

The results and conclusions of the SD020 RI/BRA were reviewed and compared to current NMED soil screening levels (**Table 2-9, Table 2-10,** and **Figure 2-7**). All of the RI analytical results with a current evaluation were presented to the NMED RCRA section in the RFI Report. URS completed a preliminary risk screening of this site following current NMED guidance. The results of this screening were presented in further detail in the RFI report.

The results of previous investigations were reviewed as part of the RFI and the conclusions for SD020 were presented in the RFI report (URS 2007). The RFI review indicated that arsenic results exceeded the current NMED residential soil screening levels in surface and subsurface soil samples. However, it is plausible that the elevated concentrations and elevated reporting limits associated with the arsenic data in the RI (Walk-Haydel 1990) may be attributable to inter-element interference that was not properly accounted for during laboratory analysis and may not be representative of site conditions. The RFI report was reviewed by NMED, and based on NMED comments regarding arsenic levels, additional sampling at SD020 was suggested to further characterize the site.

2.4.2.4 RFI Addendum (URS 2010)

RFI Addendum fieldwork was completed, which consisted of the completion of four soil borings advanced to 15 feet bgs. Samples were collected and analyzed for arsenic to determine if the elevated concentrations and elevated reporting limits associated with the arsenic data in the RI (Walk-Haydel 1990) may be attributable to inter-element interference that was not properly accounted for during laboratory analysis and may not be representative of site conditions. With the exception of one arsenic level (4.6 mg/kg), which slightly exceeded Cannon AFB background level (4.3 mg/kg) and the residential SSL (3.9 mg/kg) in the 0 to 4 foot bgs interval at soil location SB01, no elevated arsenic concentrations were identified. Based on the RFI Addendum sample results (**Table 2-11, Table 2-12,** and **Figure 2-7**), the RI data was considered invalid since previous arsenic data in the RI (Walk Haydel 1990) may be attributed to inter-element interference. Because the maximum arsenic concentration detected during the RFI (4.6 mg/kg) was above the 2012 residential SSL (3.9 mg/kg) and background level (4.25 mg/kg), but below the 2012 industrial SSL (17.7 mg/kg), CAC with controls was recommended for SD020. SD020 is listed on Table 2 (CAC with controls) on the current RCRA permit.

TABLE 2-1
SUMMARY OF BACKGROUND ELEMENTAL CONCENTRATIONS IN SOIL
CANNON AFB, NEW MEXICO

Element	Mean (mg/kg)		Standard Deviation (mg/kg)		95 Percent Upper Tolerance Limit of Background Concentrations (mg/kg)	
	Surface Soil	Subsurface Soil	Surface Soil	Subsurface Soil	Surface Soil	Subsurface Soil
Aluminum	5508	5932	1964	2183	8950	12214
Antimony	ND [1]	ND [1]	ND [1]	ND [1]	3.15 [1]	16 [1]
Arsenic	2.807 [2]	2.887 [2]	1.019 [2]	0.723 [2]	5.16 [2]	4.38 [3]
Barium	100	210	165	199	670	890
Beryllium	0.35 [3]	0.35 [3]	0.13 [3]	0.17 [3]	0.78 [3]	0.73 [3]
Cadmium	ND [1]	ND [1]	ND [1]	ND [1]	0.435 [1]	1.3 [1]
Calcium	5645	89410	11366	64611	44800	237498
Chromium (total)	7.1	5.6	1.3	2.33	10.5	13.3
Cobalt	2.9	2.6 [3]	1	1.4 [3]	6.6	4.7 [3]
Copper	6.8	3.8 [3]	4.6	1.97 [3]	18.3	8.3 [3]
Iron	6458	5148	1349	2262	10100	13148
Lead	6.8	4.7	1.6	1.7	12	8.7
Magnesium	1066	4260	390	3856	1930	19300
Manganese	139	83	51	50	307	333
Mercury	0.025 [3]	ND [1]	0.016 [3]	ND [1]	0.056 [3]	0.019 [1]
Nickel	5.5	5.9 [3]	1.6	2.41 [3]	11	14.9 [3]
Potassium	1345	1222	413	417	2691	2512
Selenium	ND [1]	0.47 [3]	ND [1]	0.31 [3]	0.26 [1]	1.1 [3]
Silver	--- [4]	ND [1]	--- [4]	ND [1]	0.4 [4]	2.65 [1]
Sodium	91	351 [3]	10	253 [3]	102	1227 [3]
Thallium	0.172 [2]	0.117 [2]	0.0438 [2]	0.0271 [2]	0.262 [1]	0.172 [1]
Vanadium	14.9	16	2.8	5.2	23.3	32.8
Zinc	15.4	12.1	5.2	4.8	32.2	30.6

Notes:

[1] All analytical samples were nondetect; therefore, a mean and standard deviation were not calculated. One-half the highest reporting limit is used as the 95% UTL. The actual mean, standard deviation, and UTL may be less than these values.

[2] This value was calculated based on detected results from the combined 1997 and 2016 data collected and discussed in Section 5.2 of this report.

[3] Values determined from a data set including one-half of the reporting limits for nondetects.

[4] Silver was detected in only one sample; therefore, a mean and standard deviation were not calculated. The single detected concentration is used as the 95% UTL.

AFB = Air Force Base

mg/kg = milligrams per kilogram

UTL = upper tolerance limit

TABLE 2-2
COMPARISON OF MAXIMUM SURFACE SOIL CONCENTRATIONS TO NMED SSLs
STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/kg)[1]	Background Concentration[2] (mg/kg)	Residential Soil SSL Concentration[3] (mg/kg)	Industrial Soil SSL Concentration[4] (mg/kg)	Construction Worker Soil SSL Concentration[5] (mg/kg)		Soil to Groundwater SSL Using DAF[6] = 20
METALS								
Arsenic*	6/8	5.03E+01	5.16E+00	4.25E+00	2.15E+01	5.74E+01		2.99E-01
Barium	7/8	6.05E+02	6.70E+02	1.56E+04	2.55E+05	4.39E+03		2.70E+03
Cadmium	8/8	1.70E+01	4.35E-01	7.05E+01	1.11E+03	7.21E+01		9.39E+00
Chromium	8/8	5.70E+01	1.05E+01	1.17E+05	1.95E+06	5.31E+05	max	4.91E+08
Copper	3/3	1.20E+01	1.83E+01	3.13E+03	5.19E+04	1.42E+04		5.56E+02
Iron	3/3	7.70E+03	1.01E+04	5.48E+04	9.08E+05	2.48E+05		6.96E+03
Lead	8/8	7.40E+01	1.20E+01	4.00E+02	8.00E+02	8.00E+02	IEUBK	NA
Selenium	5/8	1.14E+02	1.10E+00	3.91E+02	6.49E+03	1.75E+03		1.02E+01

Notes:
AFB = Air Force Base
kg/mg = kilograms per milligram
mg/day = milligrams per day
mg/kg = milligrams per kilogram
* = Detected arsenic concentrations may be artificially elevated due to inter-element inference and/or elevated laboratory reporting limits
IEUBK = Indicates that the SSL is derived using EPA's Integrated Exposure Uptake Biokinetic model
max = Indicates a chemical that exhibits relatively low toxicity, so a non-risk-based maximum concentration of 1.00E+05 mg/kg is used as the SSL.
NMED = New Mexico Environment Department
RDA = recommended daily allowance
SSL = soil screening level
[1] Maximum detected concentration from all investigations at SD012.
[2] Site-specific background is the 95% upper tolerance limit (UTL) established in 1997 [W-C 1997] for all but arsenic which is discussed in Section 5.2.
[3] NMED Soil Screening Levels for Residential Soil (NMED 2015a).
[4] NMED Soil Screening Levels for Industrial Soil (NMED 2015a) - NOT APPLICABLE TO THIS SITE.
[5] NMED Soil Screening Levels for the Construction Worker (NMED 2015a).
[6] NMED Soil-to-Groundwater Screening Levels (NMED 2015a) with a dilution attenuation factor (DAF) of 20 - NOT APPLICABLE TO THIS SITE.
Shading indicates the maximum concentration exceeds an applicable SSL.

TABLE 2-3
COMPARISON OF MAXIMUM COMBINED SOIL CONCENTRATIONS (0-20 FEET) TO NMED SSLs
STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/kg)[1]	Qual	Background Concentration[2] (mg/kg)	Residential Soil SSL Concentration[3] (mg/kg)	Industrial Soil SSL Concentration[4] (mg/kg)	Construction Worker Soil SSL Concentration[5] (mg/kg)		Soil to Groundwater SSL Using DAF[6] = 20
OIL AND GREASE	1/3	4.00E-02			N/A	N/A	N/A		N/A
METALS									
Arsenic*	33/40	1.12E+02		5.16E+00	4.25E+00	2.15E+01	5.74E+01		2.99E-01
Barium	40/40	6.05E+02		8.90E+02	1.56E+04	2.55E+05	4.39E+03		2.70E+03
Cadmium	40/40	1.70E+01		1.30E+00	7.05E+01	1.11E+03	7.21E+01		9.39E+00
Chromium	40/40	5.70E+01		1.05E+01	1.17E+05	1.95E+06	5.31E+05	max	4.91E+08
Copper	3/3	1.20E+01		1.83E+01	3.13E+03	5.19E+04	1.42E+04		5.56E+02
Iron	3/3	7.70E+03		1.01E+04	5.48E+04	9.08E+05	2.48E+05		6.96E+03
Lead	40/40	7.50E+01		1.20E+01	4.00E+02	8.00E+02	8.00E+02	IEUBK	NA
Mercury	4/38	2.10E-01		1.90E-02	2.38E+01	1.12E+02	2.07E+01		6.54E-01
Nickel	3/3	6.10E+00		1.49E+01	1.56E+03	2.57E+04	7.53E+02		4.85E+02
Selenium	22/40	1.91E+02		1.10E+00	3.91E+02	6.49E+03	1.75E+03		1.02E+01
Zinc	3/3	5.70E+01		3.06E+01	2.35E+04	3.89E+05	1.06E+05		7.41E+03

Notes:
AFB = Air Force Base
kg/mg = kilograms per milligram
mg/day = milligrams per day
mg/kg = milligrams per kilogram
* = Detected arsenic concentrations may be artificially elevated due to inter-element inference and/or elevated laboratory reporting limits
IEUBK = Indicates that the SSL is derived using EPA's Integrated Exposure Uptake Biokinetic model
max = Indicates a chemical that exhibits relatively low toxicity, so a non-risk-based maximum concentration of 1.00E+05 mg/kg is used as the SSL.
N/A = Not applicable
NMED = New Mexico Environment Department
RDA = recommended daily allowance
SSL = soil screening level
[1] Maximum detected concentration from all investigations at SD012.
[2] Site-specific background is the 95% upper tolerance limit (UTL) established in 1997 [W-C 1997] for all but arsenic which is discussed in Section 5.2.
[3] NMED Soil Screening Levels for Residential Soil (NMED 2015a).
[4] NMED Soil Screening Levels for Industrial Soil (NMED 2015a) - NOT APPLICABLE TO THIS SITE.
[5] NMED Soil Screening Levels for the Construction Worker (NMED 2015a).
[6] NMED Soil-to-Groundwater Screening Levels (NMED 2015a) with a dilution attenuation factor (DAF) of 20 - NOT APPLICABLE TO THIS SITE.
Shading indicates the maximum concentration exceeds an applicable SSL.

TABLE 2-4
SUMMARY OF CHEMICAL DETECTIONS IN SOIL FROM THE RFI ADDENDUM
STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
CANNON AFB, NEW MEXICO

FIELD ID			C85-SS01-000				C85-SB01-000				C85-SB01-008				C85-SB01-012				C85-SB02-000			
DATE COLLECTED			October 18, 2008				October 22, 2008				October 22, 2008				October 22, 2008				October 22, 2008			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	6.00E+00	10/10	6.00E+00	9.00E-02	6.00E-01		3.30E+00	9.00E-02	6.00E-01		2.80E+00	9.00E-02	6.00E-01		2.00E+00	9.00E-02	6.00E-01		2.80E+00	9.00E-02	6.00E-01	

Notes:
* Precise date of collection could not be determined
mg/kg = milligrams per kilogram
AFB = Air Force Base
ID = Identification
MDL = Method Detection Limit
N/A = Not Applicable
Qual = Qualifier
RL = Reporting Limit
RFI = Resource Conservation and Recovery Act Facility Investigation

TABLE 2-4
SUMMARY OF CHEMICAL DETECTIONS IN SOIL FROM THE RFI ADDENDUM
STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
CANNON AFB, NEW MEXICO

FIELD ID			C85-SB02-008				C85-SB02-012				ST-1				ST-2				ST-3			
DATE COLLECTED			October 22, 2008				October 22, 2008				1985 *				1985 *				1985 *			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	6.00E+00	10/10	1.60E+00	9.00E-02	6.00E-01		2.00E+00	9.00E-02	6.00E-01		1.60E+00	N/A	N/A		1.80E+00	N/A	N/A		1.50E+00	N/A	N/A	

Notes:
* Precise date of collection could not be determined
mg/kg = milligrams per kilogram
AFB = Air Force Base
ID = Identification
MDL = Method Detection Limit
N/A = Not Applicable
Qual = Qualifier
RL = Reporting Limit
RFI = Resource Conservation and Recovery Act Facility Investig

TABLE 2-5
COMPARISON OF MAXIMUM SOIL CONCENTRATIONS TO NMED SSLs AND BACKGROUND CONCENTRATIONS
STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
CANNON AFB, NEW MEXICO

Chemical	Maximum Surface Soil Detected Concentration (mg/kg)	Maximum Subsurface Soil Detected Concentration (mg/kg)	Qual	Residential SSL (mg/kg) [1]	Industrial SSL (mg/kg) [1]	Background Concentration (mg/kg)	Ecological Risk Screening Concentration[2] (mg/kg)	Exceeds Residential SSL[1] ?	Exceeds Industrial SSL[1] ?	Exceeds Background ?	Exceeds Ecological Risk Screening Concentration[2]
METALS											
Arsenic	6.00E+00	3.30E+00		4.25E+00	2.15E+01	5.16E+00	1.80E+01	YES[3]	NO	YES[3]	NO

Notes:

[1] NMED Soil Screening Levels (NMED 2015a)

[2] USEPA Eco-SSL (2009)

[3] Surface soil only

mg/kg = milligrams per kilogram

AFB = Air Force Base

NMED = New Mexico Environment Department

Qual = Qualifier

SSL = Soil Screening Level

USEPA = United States Environmental Protection Agency

TABLE 2-6
COMPARISON OF MAXIMUM SURFACE SOIL CONCENTRATIONS TO NMED SSLs
OLD ENTOMOLOGY RINSE AREA (SD017)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/kg)[1]	Qual	Background Concentration[2] (mg/kg)	Residential Soil SSL Concentration[3] (mg/kg)	Industrial Soil SSL Concentration[4] (mg/kg)	Construction Worker Soil SSL Concentration[5] (mg/kg)	Soil to Groundwater SSL Using DAF[6] = 20
PESTICIDES/HERBICIDES								
alpha Chlordane*	8/8	1.60E-02	J	N/A	1.77E+01	8.91E+01	1.53E+02	2.26E+00
gamma Chlordane*	1/8	4.70E-02	J	N/A	1.77E+01	8.91E+01	1.53E+02	2.26E+00
4,4-DDD	4/8	5.00E-01		N/A	2.22E+01	1.07E+02	7.78E+02	1.08E+00
4,4-DDE	8/8	2.60E+00		N/A	1.57E+01	7.55E+01	5.49E+02	8.08E+00
4,4-DDT	8/8	2.00E+00		N/A	1.87E+01	9.50E+01	1.62E+02	1.16E+01
Heptachlor epoxide*	8/8	1.90E-02	J	N/A	1.18E+00	5.70E+00	4.15E+01	5.45E-02

Notes:
mg/kg = milligrams per kilogram
AFB = Air Force Base
J = estimated
kg/mg = kilograms per milligram
mg/day = milligrams per day
N/A = not applicable
RDA = recommended daily allowance
SWMU = solid waste management unit
*Chlordane was used as a surrogate for alpha and gamma-chlordane. Heptachlor was used as a surrogate for heptachlor epoxide.
[1] Maximum detected concentration from all investigations at SD017.
[2] Site-specific background is the 95% upper tolerance limit (UTL) [W-C 1997].
[3] NMED Soil Screening Levels for Residential Soil (NMED 2015a).
[4] NMED Soil Screening Levels for Industrial Soil (NMED 2015a)
[5] NMED Soil Screening Levels for the Construction Worker (NMED 2015a).
[6] NMED Soil-to-Groundwater Screening Levels (NMED 2015a) with a dilution attenuation factor (DAF) of 20 - NOT APPLICABLE TO THIS SITE.

TABLE 2-7
COMPARISON OF MAXIMUM COMBINED SURFACE AND SUBSURFACE SOIL CONCENTRATIONS TO NMED SSLs
OLD ENTOMOLOGY RINSE AREA (SD017)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/kg)[1]	Qual	Background Concentration[2] (mg/kg)	Residential Soil SSL Concentration[3] (mg/kg)	Industrial Soil SSL Concentration[4] (mg/kg)	Construction Worker Soil SSL Concentration[5] (mg/kg)	Soil to Groundwater SSL Using DAF[6] = 20
PESTICIDES/HERBICIDES								
alpha Chlordane	1/43	2.00E-01	J	N/A	1.77E+01	8.91E+01	1.53E+02	2.26E+00
gamma Chlordane	1/43	4.70E-02	J	N/A	1.77E+01	8.91E+01	1.53E+02	2.26E+00
2,4-D**	2/43	3.41E+00		N/A	7.00E+02	9.60E+03	9.60E+03	9.00E-01
4,4-DDD	6/43	5.00E-01		N/A	2.22E+01	1.07E+02	7.78E+02	1.08E+00
4,4-DDE	12/43	2.60E+00		N/A	1.57E+01	7.55E+01	5.49E+02	8.08E+00
4,4-DDT	12/43	2.00E+00		N/A	1.87E+01	9.50E+01	1.62E+02	1.16E+01
Dieldrin	1/43	2.00E-06		N/A	3.33E-01	1.60E+00	1.17E+01	1.04E-02
Heptachlor epoxide	1/43	1.90E-02	J	N/A	1.18E+00	5.70E+00	4.15E+01	5.45E-02
Toxaphene	1/43	2.21E-04		N/A	4.84E+00	2.33E+01	1.70E+02	3.54E-01
METALS								
Arsenic	7/7	5.60E+00		5.16E+00	4.25E+00	2.15E+01	5.74E+01	2.99E-01
Mercury	7/7	2.40E-01		1.90E-02	2.38E+01	1.12E+02	2.07E+01	6.54E-01

Notes:
mg/kg = milligrams per kilogram
AFB = Air Force Base
J = Estimated
kg/mg = kilograms per milligram
mg/day = milligrams per day
N/A = not applicable
RDA = recommended daily allowance
SWMU = solid waste management unit
[1] Maximum detected concentration from all investigations at SD017.
[2] Site-specific background is the 95% upper tolerance limit (UTL)for arsenic as discussed in Section 5.2.
[3] NMED Soil Screening Levels for Residential Soil (NMED 2015a) - NOT APPLICABLE TO SUBSURFACE SOILS AT THIS SITE.
[4] NMED Soil Screening Levels for Industrial Soil (NMED 2015a).
[5] NMED Soil Screening Levels for the Construction Worker (NMED 2015a).
[6] NMED Soil-to-Groundwater Screening Levels (NMED 2015a) with a dilution attenuation factor (DAF) of 20 - NOT APPLICABLE TO THIS SITE.
*Chlordane was used as a surrogate for alpha and gamma-chlordane. Heptachlor was used as a surrogate for heptachlor epoxide.
**There are no NMED values for 2,4-D. The values shown are Regional Screening Levels (RSLs) (USEPA 2015). The industrial values is used for the construction worker.
Shading indicates the maximum concentration exceeds the designated SSL.

TABLE 2-8
COMPARISON OF MAXIMUM GROUNDWATER CONCENTRATIONS TO MCLs
OLD ENTOMOLOGY RINSE AREA (SD017)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/L)[1]	Qual	Background Concentration[2] (mg/L)	Primary Drinking Water Standard MCL[3] (mg/L)	NMED Tap Water (mg/L)[4]
METALS						
Arsenic	1/1	4.70E-03	J	N/A	1.00E-02	4.42E-04
Barium	1/1	6.60E-01		N/A	2.00E+00	7.30E+00
Copper	1/1	1.50E-01		N/A	1.30E+00	1.46E+00
Lead	1/1	3.40E-02	J	N/A	1.50E-02	N/A
Nickel	1/1	2.90E-02	J	N/A	N/A	7.30E-01
Vanadium	1/1	3.50E-02		N/A	N/A	3.60E-02
Zinc	1/1	4.90E-02		N/A	5.00E+00	1.10E+01

Notes:
mg/L = milligrams per liter
AFB = Air Force Base
J = Estimated
N/A = Not applicable
NMED = New Mexico Environment Department
Qual = Qualifier
RDA = recommended daily allowance

(1) Detected concentration from Well 96K.
(2) Site-specific groundwater background is not available.
(3) Maximum Contaminant Level (MCL) (USEPA 2005)
(4) NMED tap water (NMED 2006).
Shading indicates the maximum concentration exceeds the designated SSL.

TABLE 2-9
COMPARISON OF MAXIMUM SURFACE SOIL CONCENTRATIONS TO NMED SSLs
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/kg)[1]	Qual	Background Concentration[2] (mg/kg)	Daily Intake from the Site[3] (Essential Nutrients)	Recommended Daily Allowance[4] (Essential Nutrients)	Residential Soil SSL Concentration[5] (mg/kg)	Industrial Soil SSL Concentration[6] (mg/kg)	Construction Worker Soil SSL Concentration[7] (mg/kg)		Soil to Groundwater SSL Using DAF[8] = 20
JP-4 FUEL MIXTURE*	4/13	1.26E+03	J				1.00E+03	3.00E+03	3.00E+03		N/A
VOLATILE ORGANICS											
Acetone	1/13	1.40E-01	J				6.63E+04	9.60E+05	2.42E+05		4.98E+01
2-Butanone	1/13	2.30E-02	J				3.74E+04	4.11E+05	9.17E+04	sat	2.01E+01
Ethylbenzene	1/13	3.70E-02					7.51E+01	3.68E+02	1.77E+03	sat	2.62E-01
Toluene	1/13	3.00E-03	J				5.23E+03	6.13E+04	1.40E+04	sat	1.21E+01
Xylene (total)	1/13	7.00E-02					8.71E+02	4.28E+03	7.98E+02	sat	2.98E+00
SEMIVOLATILE ORGANICS											
2-Methylnapthalene**	1/13	1.30E+00	J				4.97E+01	2.41E+02	1.59E+02		8.23E-02
Bis(2-Ethyl hexyl)phthalate	1/13	1.70E+00	J				3.80E+02	1.83E+03	5.38E+03		2.00E+02
METALS											
Aluminum	2/2	6.32E+03		8.95E+03			7.78E+04	1.29E+06	4.14E+04		5.97E+05
Arsenic***	8/13	8.03E+01		3.60E+00			4.25E+00	2.15E+01	5.74E+01		2.99E-01
Barium	13/13	3.82E+03		6.70E+02			1.56E+04	2.55E+05	4.39E+03		2.70E+03
Cadmium	13/13	1.05E+01		4.35E-01			7.05E+01	1.11E+03	7.21E+01		9.39E+00
Calcium	2/2	1.44E+05		4.48E+04	1.44E+01	1.20E+03	N/A	N/A	N/A		N/A
Chromium	13/13	1.15E+02	J	1.05E+01			1.17E+05	1.95E+06	5.31E+05		4.91E+08
Cobalt[9]	2/2	1.26E+01		6.60E+00			1.52E+03	2.05E+04	6.10E+01		6.61E+02
Copper	1/2	5.90E+01		1.83E+01			3.13E+03	5.19E+04	1.42E+04		5.56E+02
Iron	2/2	4.12E+04		1.01E+04			5.48E+04	9.08E+05	2.48E+05		6.96E+03
Lead	13/13	2.58E+02		1.20E+01			4.00E+02	8.00E+02	8.00E+02	IEUBK	N/A
Magnesium	2/2	2.74E+03		1.93E+03	2.74E-01	4.00E+02	N/A	N/A	N/A		N/A
Manganese	2/2	4.43E+02		3.07E+02			1.05E+04	1.60E+05	4.64E+02		2.63E+03
Mercury	2/13	6.10E-01		5.60E-02			2.38E+01	1.12E+02	2.07E+01		6.54E-01
Nickel	2/2	4.91E+01	J	1.10E+01			1.56E+03	2.57E+04	7.53E+02		4.85E+02
Potassium	2/2	1.13E+03	J	2.69E+03	1.13E-01	3.90E+02 - 7.80E+02	N/A	N/A	N/A		N/A
Selenium	8/13	1.54E+02		2.60E-01			3.91E+02	6.49E+03	1.75E+03		1.02E+01
Sodium	2/2	6.41E+03		1.02E+02	6.41E-01	1.00E+03	N/A	N/A	N/A		N/A
Vanadium	2/2	1.55E+01		2.33E+01			3.94E+02	6.53E+03	6.14E+02		1.26E+03
Zinc	2/2	4.67E+02	J	3.22E+01			2.35E+04	3.89E+05	1.06E+05		7.41E+03

TABLE 2-9
COMPARISON OF MAXIMUM SURFACE SOIL CONCENTRATIONS TO NMED SSLs
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

Notes:
* JP4 fuel mixture is composed of six organic compounds with seven (heptanes) to seventeen carbons (heptadecanes).
** = Naphthalene used as a surrogate for 2-methylnapthalene.
*** = Detected arsenic concentrations may be artificially elevated due to inter-element inference and/or elevated laboratory reporting limits.
AFB = Air Force Base
IEUBK = Indicates that the SSL is derived using EPA's Integrated Exposure Uptake Biokinetic model.
J = Estimated
kg/mg = kilograms per milligram
mg/day = milligrams per day
mg/kg = milligrams per kilogram
N/A = Not applicable
NMED = New Mexico Environment Department
Qual = qualifier
RDA = recommended daily allowance
sat = Detected concentrations above the "sat" value may indicate the presence of nonaqueous phase liquid (NAPL).
SSL = soil screening level
[1] Maximum detected concentration from all investigations at SD020.
[2] Site-specific background is the 95% upper tolerance limit (UTL) [W-C 1997].
[3] Daily intake from site soil (mg/day) = maximum detected concentration (mg/kg) x ingestion rate of 100 mg/day for construction workers x conversion factor of 1.00E-06 kg/mg
[4] National Research Council 1989. RDAs have not been established for potassium and sodium. These numbers are based on recommendations for a 2,000 calorie diet.
[5] NMED Soil Screening Levels for Residential Soil (NMED 2006) or NMED TPH Screening Guidelines (NMED 2006) for Residential Direct Exposure.
[6] NMED Soil Screening Levels for Industrial Soil (NMED 2006) or NMED TPH Screening Guidelines (NMED 2006) for Industrial Direct Exposure.
[7] NMED Soil Screening Levels for the Construction Worker (NMED 2006).
[8] NMED Soil-to-Groundwater Screening Levels (NMED 2006) with a dilution attenuation factor (DAF) of 20 - NOT APPLICABLE TO THIS SITE.
[9] USEPA May 2016 RSL Tables
Shading indicates the maximum concentration exceeds applicable SSL.

TABLE 2-10
COMPARISON OF MAXIMUM COMBINED SURFACE AND SUBSURFACE SOIL (0-10 FEET) CONCENTRATIONS TO NMED SSLs
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Maximum Detected Concentration (mg/kg)[1]	Qual	Background Concentration[2] (mg/kg)	Daily Intake from the Site[3] (Essential Nutrients)	Recommended Daily Allowance[4] (Essential Nutrients)	Residential Soil SSL Concentration[5] (mg/kg)	Industrial Soil SSL Concentration[6] (mg/kg)	Construction Worker Soil SSL Concentration[7] (mg/kg)		Soil to Groundwater SSL Using DAF[8] = 20
JP4 FUEL MIXTURE*	4/53	1.26E+03					1.00E+03	3.00E+03	3.00E+03		N/A
VOLATILE ORGANICS											
Acetone	5/53	1.40E-01	J				6.63E+04	9.60E+05	2.42E+05		4.98E+01
2-Butanone	2/53	2.30E-02	J				3.74E+04	4.11E+05	9.17E+04	sat	2.01E+01
Methylene Chloride	2/53	3.00E-03	J				4.09E+02	5.13E+03	1.21E+03	sat	4.71E-01
Toluene	1/53	3.00E-03	J				5.23E+03	6.13E+04	1.40E+04	sat	1.21E+01
SEMIVOLATILE ORGANICS											
2-Methylnapthalene**	4/53	1.30E+00	J				4.97E+01	2.41E+02	1.59E+02		8.23E-02
Bis(2-Ethyl hexyl)phthalate	1/53	1.70E+00	J				3.80E+02	1.83E+03	5.38E+03		2.00E+02
Butylbenzylphthalate	1/53	2.40E-01	J				2.40E+02	2.40E+02	2.40E+02		8.10E+02
METALS											
Aluminum	8/8	9.84E+03		1.22E+04			7.78E+04	1.29E+06	4.14E+04		5.97E+05
Arsenic***	35/53	1.52E+02		4.30E+00			4.25E+00	2.15E+01	5.74E+01		2.99E-01
Barium	53/53	4.29E+03		8.90E+02			1.56E+04	2.55E+05	4.39E+03		2.70E+03
Beryllium	2/8	5.40E-01	J	7.30E-01			1.56E+02	2.58E+03	1.48E+02		1.96E+02
Cadmium	46/53	1.05E+01		1.30E+00			7.05E+01	1.11E+03	7.21E+01		9.39E+00
Calcium	8/8	2.23E+05		2.37E+05	2.23E+01	1.20E+03	N/A	N/A	N/A		N/A
Chromium	53/53	1.15E+02	J	1.33E+01			1.17E+05	1.95E+06	5.31E+05		4.91E+08
Cobalt	8/8	1.26E+01		4.70E+00			1.52E+03	2.05E+04	6.10E+01		6.61E+02
Copper	1/8	5.90E+01		8.30E+00			3.13E+03	5.19E+04	1.42E+04		5.56E+02
Iron	8/8	4.12E+04		1.31E+04			5.48E+04	9.08E+05	2.48E+05		6.96E+03
Lead	53/53	2.58E+02		8.70E+00			4.00E+02	8.00E+02	8.00E+02	IEUBK	N/A
Magnesium	8/8	4.50E+03		1.93E+04	4.50E-01	4.00E+02	N/A	N/A	N/A		N/A
Manganese	8/8	4.43E+02		3.33E+02			1.05E+04	1.60E+05	4.64E+02		2.63E+03
Mercury	2/53	6.10E-01		1.90E-02			2.38E+01	1.12E+02	2.07E+01		6.54E-01
Nickel	8/8	4.91E+01		1.49E+01			1.56E+03	2.57E+04	7.53E+02		4.85E+02
Potassium	8/8	2.03E+03		2.51E+03	1.13E-01	3.90E+02 - 7.80E+02	N/A	N/A	N/A		N/A
Selenium	37/53	2.73E+02		1.10E+00			3.91E+02	6.49E+03	1.75E+03		1.02E+01
Silver	1/8	1.00E+00	J	2.65E+00			3.91E+02	6.49E+03	1.77E+03		1.38E+01
Sodium	8/8	6.41E+03		1.23E+03	6.41E-01	1.00E+03	N/A	N/A	N/A		N/A
Vanadium	8/8	2.07E+01		3.28E+01			3.94E+02	6.53E+03	6.14E+02		1.26E+03
Zinc	8/8	4.67E+02	J	3.06E+01			2.35E+04	3.89E+05	1.06E+05		7.41E+03

TABLE 2-10
COMPARISON OF MAXIMUM COMBINED SURFACE AND SUBSURFACE SOIL (0-10 FEET) CONCENTRATIONS TO NMED SSLs
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

Notes:
* JP4 fuel mixture is composed of six organic compounds with seven (heptanes) to seventeen carbons (heptadecanes).
** = Napthalene used as a surrogate for 2-methylnapthalene.
*** = Detected arsenic concentrations may be artificially elevated due to inter-element inference and/or elevated laboratory reporting limits.
AFB = Air Force Base
IEUBK = Indicates that the SSL is derived using EPA's Integrated Exposure Uptake Biokinetic model.
J = Estimated
kg/mg = kilograms per milligram
max = Indicates a chemical that exhibits relatively low toxicity, so a non-risk-based maximum concentration of 1.00E+05 mg/kg is used as the SSL.
mg/day = milligrams per day
mg/kg = milligrams per kilogram
N/A = Not applicable
NMED = New Mexico Environment Department
Qual = qualifier
RDA = recommended daily allowance
sat = Detected concentrations above the "sat" value may indicate the presence of nonaqueous phase liquid (NAPL).
SSL = soil screening level
[1] Maximum detected concentration from all investigations at SD020.
[2] Site-specific background is the 95% upper tolerance limit (UTL) [W-C 1997].
[3] Daily intake from site soil (mg/day) = maximum detected concentration (mg/kg) x ingestion rate of 100 mg/day for construction workers x conversion factor of 1.00E-06 kg/mg
[4] National Research Council 1989. RDAs have not been established for potassium and sodium. These numbers are based on recommendations for a 2,000 calorie diet.
[5] NMED Soil Screening Levels for Residential Soil (NMED 2006) or NMED TPH Screening Guidelines (NMED 2006) for Residential Direct Exposure.
[6] NMED Soil Screening Levels for Industrial Soil (NMED 2006) or NMED TPH Screening Guidelines (NMED 2006) for Industrial Direct Exposure.
[7] NMED Soil Screening Levels for the Construction Worker (NMED 2006).
[8] NMED Soil-to-Groundwater Screening Levels (NMED 2006) with a dilution attenuation factor (DAF) of 20 - NOT APPLICABLE TO THIS SITE.
Shading indicates the maximum concentration exceeds the designated SSL.

TABLE 2-11
SUMMARY OF CHEMICAL DETECTIONS IN SOIL
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			C95-SB01-000				C95-SB01-008				C95-SB01-012				C95-SB02-000				C95-SB02-006			
DATE COLLECTED			October 22, 2008				October 22, 2008				October 22, 2008				October 21, 2008				October 21, 2008			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	4.60E+00	20 / 20	4.60E+00	9.00E-02	6.00E-01		2.70E+00	9.00E-02	6.00E-01		3.00E+00	9.00E-02	6.00E-01		3.70E+00	9.00E-02	6.00E-01		3.70E+00	9.00E-02	6.00E-01	

Notes:
AFB = Air Force Base
ID = Identification
MDLs and RLs were unavailable for MDLs and RLs with N/A
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Investigation
RL = Reporting Limit

TABLE 2-11
SUMMARY OF CHEMICAL DETECTIONS IN SOIL
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			C95-SB02-015				C95-SB03-000				C95-SB03-008				C95-SB03-012				C95-SB04-000			
DATE COLLECTED			October 21, 2008				October 22, 2008				October 22, 2008				October 22, 2008				October 22, 2008			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	4.60E+00	20 / 20	2.40E+00	9.00E-02	6.00E-01		3.50E+00	9.00E-02	6.00E-01		3.80E+00	9.00E-02	6.00E-01		2.60E+00	9.00E-02	6.00E-01		3.70E+00	9.00E-02	6.00E-01	

Notes:
AFB = Air Force Base
ID = Identification
MDLs and RLs were unavailable for MDLs and RLs with N/A
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Investigation
RL = Reporting Limit

TABLE 2-11
SUMMARY OF CHEMICAL DETECTIONS IN SOIL
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			C95-SB04-008				C95-SB04-012				0951-0.5 (0953)				0951-04 (0953)				0951-06 (0953)			
DATE COLLECTED			October 22, 2008				October 22, 2008				December 7, 1991				December 7, 1991				December 7, 1991			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	4.60E+00	20 / 20	2.80E+00	9.00E-02	6.00E-01		2.60E+00	9.00E-02	6.00E-01		3.90E+00	N/A	N/A		1.50E+00	N/A	N/A		2.30E+00	N/A	N/A	

Notes:
AFB = Air Force Base
ID = Identification
MDLs and RLs were unavailable for MDLs and RLs with N/A
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Investigation
RL = Reporting Limit

TABLE 2-11
SUMMARY OF CHEMICAL DETECTIONS IN SOIL
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			0951-10 (0953)				0952-0.5 (0954)				0952-04 (0954)				0952-06 (0954)				0952-10 (0954)			
DATE COLLECTED			December 7, 1991				December 8, 1991				December 8, 1991				December 8, 1991				December 8, 1991			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	4.60E+00	20 / 20	1.30E+00	N/A	N/A		2.20E+00	N/A	N/A		1.90E+00	N/A	N/A		1.80E+00	N/A	N/A		1.90E+00	N/A	N/A	

Notes:
AFB = Air Force Base
ID = Identification
MDLs and RLs were unavailable for MDLs and RLs with N/A
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Investigation
RL = Reporting Limit

TABLE 2-12
COMPARISON OF MAXIMUM SOIL CONCENTRATIONS TO NMED SSLs AND BACKGROUND CONCENTRATIONS
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

Chemical	Maximum Detected Concentration (mg/kg)	Qual	Residential Soil Screening Levels (mg/kg) [1]	Industrial Soil Screening Levels (mg/kg) [1]	Background Concentration (mg/kg)	Ecological Risk Screening Concentration[2] (mg/kg)	Exceeds Residential SSL[1] ?	Exceeds Industrial SSL[1] ?	Exceeds Background ?	Exceeds Ecological Risk Screening Concentration[2]
METALS										
Arsenic	4.60E+00		4.25E+00	1.77E+01	5.16E+00	1.80E+01	NO	NO	NO	NO

Notes:

[1] NMED Soil Screening Levels (NMED 2015a)

[2] USEPA Eco-SSL (2009)

AFB = Air Force Base

mg/kg = milligrams per kilogram

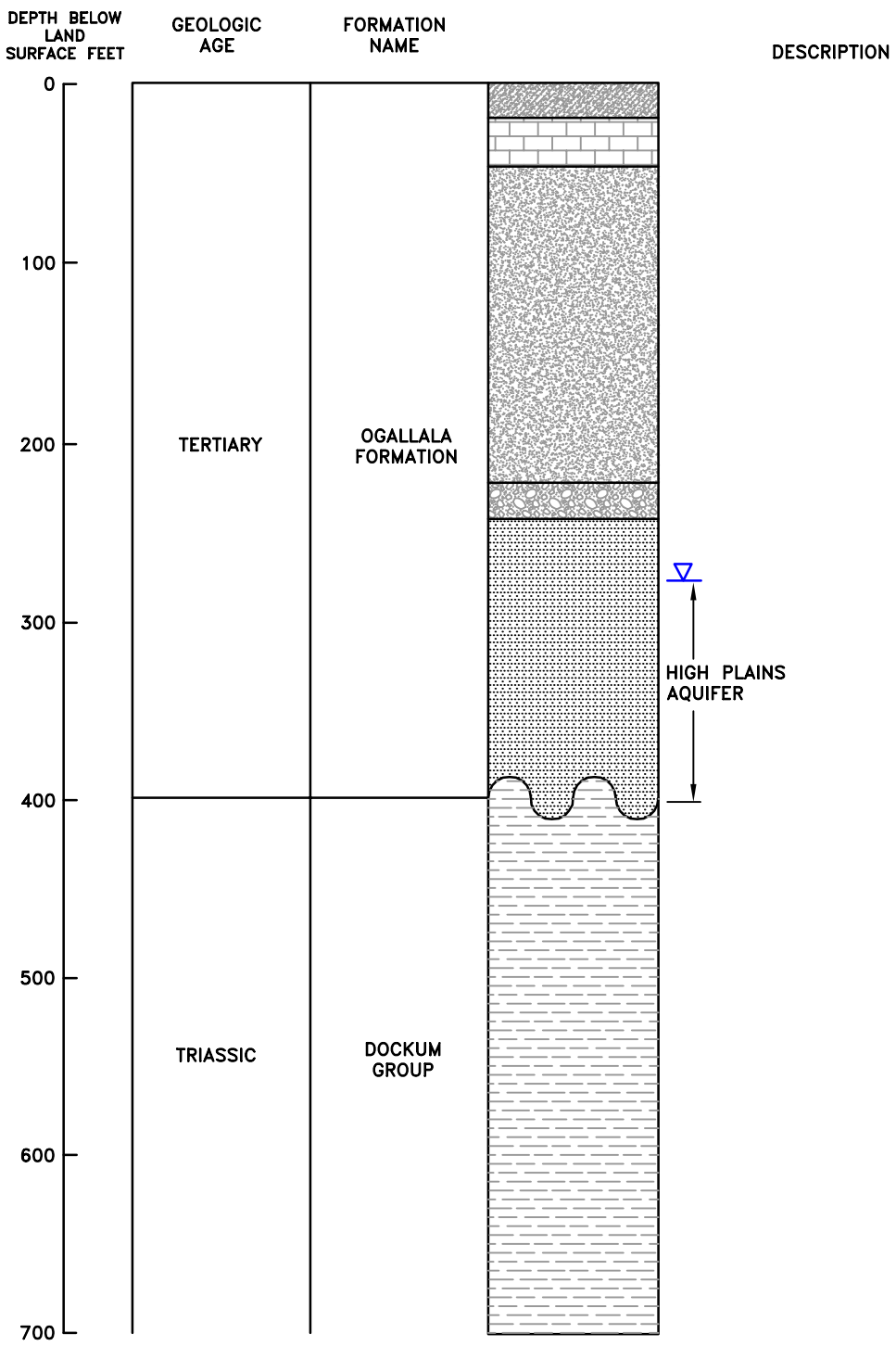
NMED = New Mexico Environment Department

NE = northeast

Qual = Qualifier

SSL = Soil Screening Level

USEPA = United States Environmental Protection Agency



LEGEND

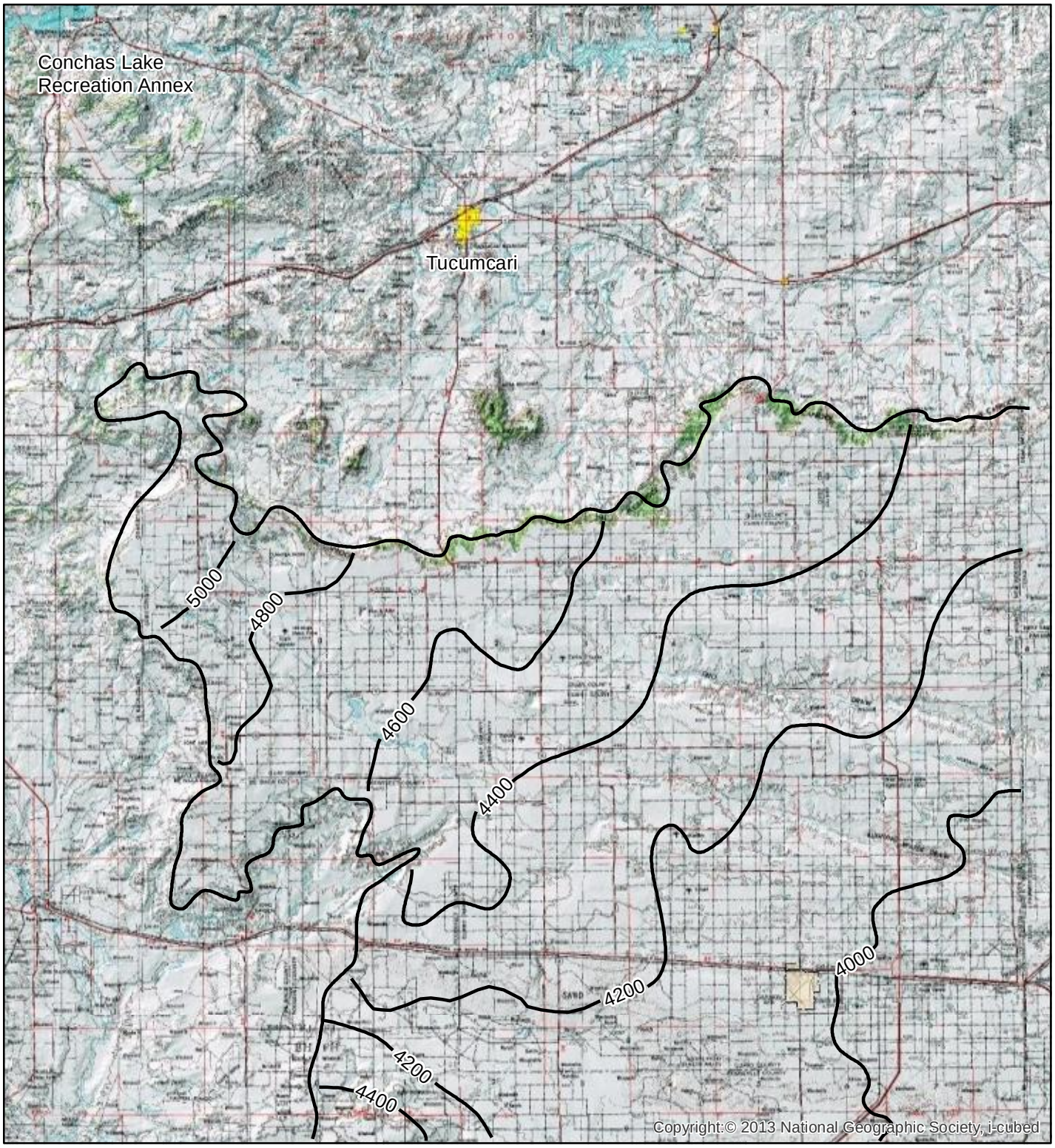
- SILTY SAND WITH CALICHE
- CALICHE
- SAND AND SILTY SAND
- SANDY GRAVEL
- SAND
- SANDSTONE (RED BEDS)
- LITHOLOGIC CONTACT
- EROSIONAL UNCONFORMITY
- WATER LEVEL

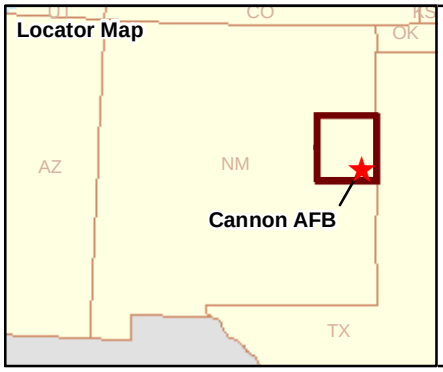
SOURCE: MODIFIED FROM GUTENTAG ET.AL., 1984

GENERALIZED GEOLOGIC STRATA AT CANNON AIR FORCE BASE
CANNON AIR FORCE BASE, NEW MEXICO

DRN. BY: DPG	DATE: 06/22/16	PROJECT NO. 23446539	FIG. NO. 2-1
CHK'D. BY: CSA	DATE: 06/22/16		

June 22, 2016 1:09:19 p.m.
Drawing: T:\CANNON\23446539\2-1.dwg





Legend

Base Boundary

Groundwater Contour
(feet above mean sea level)

Map projection: NAD83 State Plane Feet
New Mexico East (FIPS 3001)

N

10 5 0 10 Miles

Elevation and Configuration of the Water Table in the Region of Cannon Air Force Base

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No. 23446539	Figure 2-2
Checked By: MS	Revision: 0		

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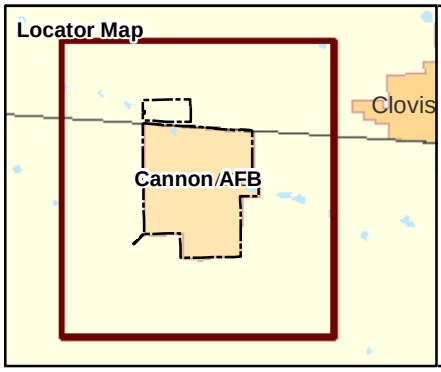

Legend

- Monitoring Well
- Private Water Well
- Base Water Well
- Base Boundary

Map projection: NAD83 State Plane Feet New Mexico, East (FIPS 3001)

N

4,000 2,000 0 4,000 Feet

Water Well Locations on and Near Cannon Air Force Base

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No. 23446539	Figure 2-3
Checked By: MS	Revision: 0		

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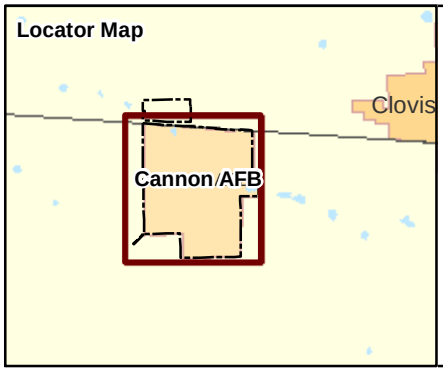
Locator Map



Legend

Base Boundary

in. = inches

N

2,000 1,000 0 2,000 Feet

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

Distribution of Soils by Type at Cannon Air Force Base

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No. 23446539	Figure 2-4
Checked By: MS	Revision: 0		

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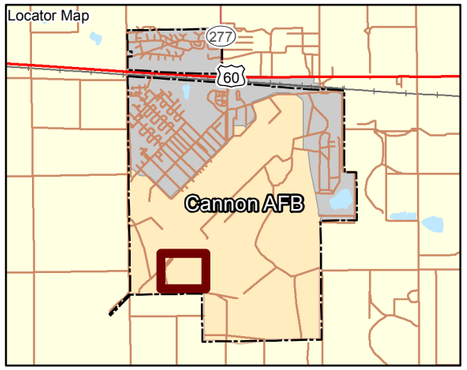

Legend

- Approximate Previous Soil Sample Location (Walk, Haydel & Associates 1990)
- Approximate Previous Soil Sample Location (URS 2010)
- Approximate Previous Surface Soil Sample Location (URS 2010)
- Site Boundary
- Base Boundary

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

200 100 0 200

Feet

Site Map with Previous Investigation Locations at SD012

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 7/8/2016	Project No: 23446539	Figure 2-5
Checked By: MS	Revision: 0		

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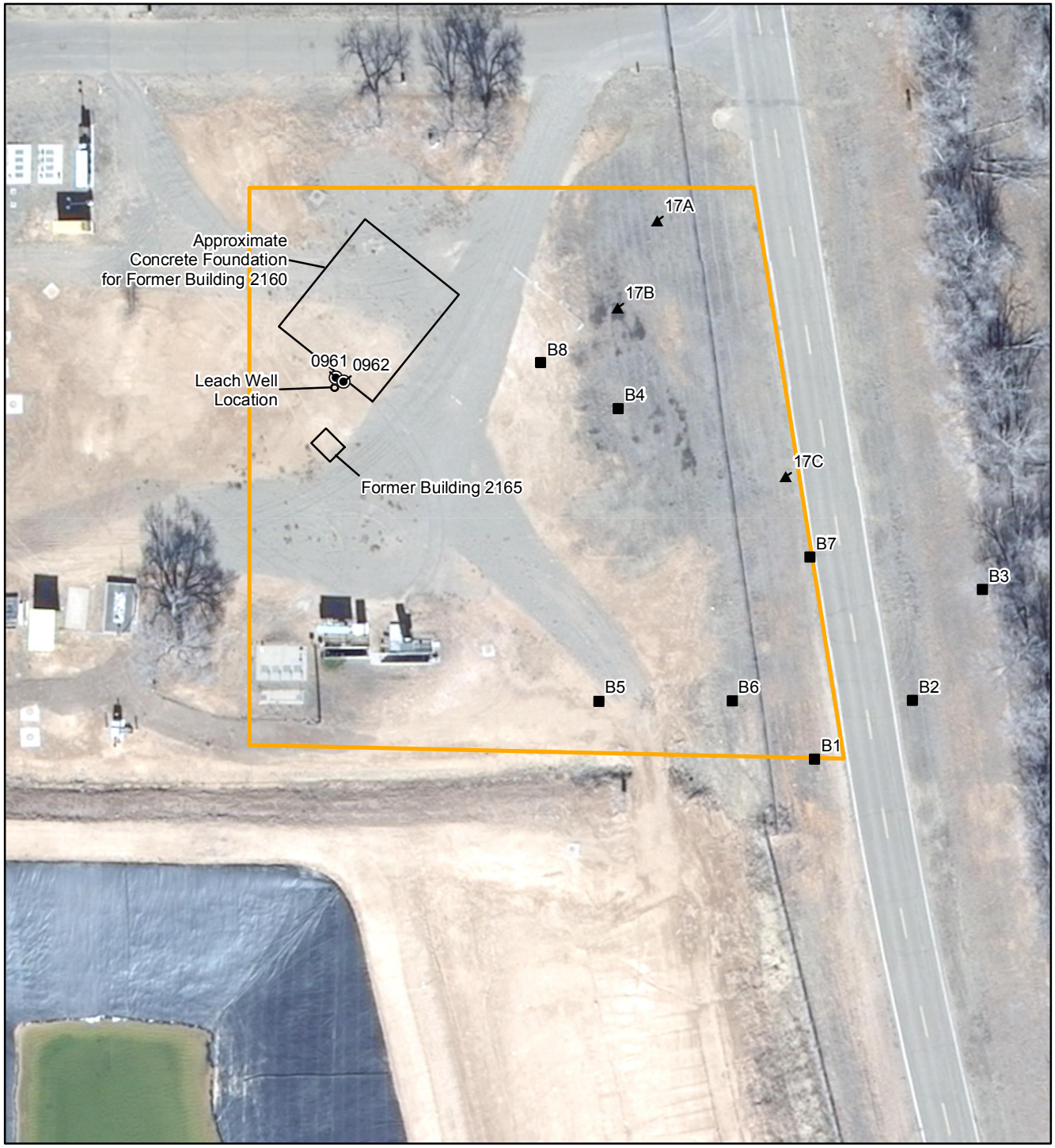

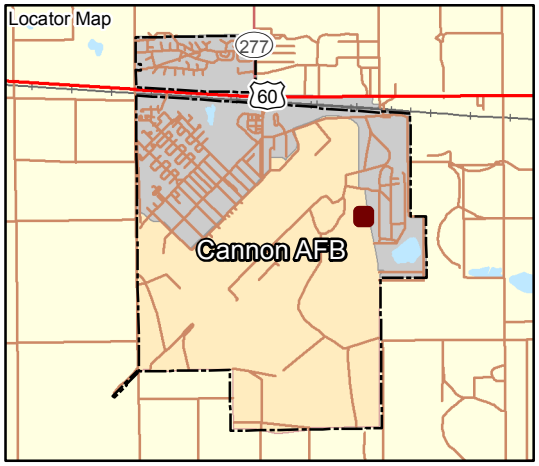

Legend

- Previous Soil Sample Location (WCC 1995)
- Previous Soil Sample Location (Walk, Haydel & Assoicates 1986)
- Previous Soil Sample Location (Radian1985)
- Site Boundary
- Base Boundary

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

60 30 0 60 Feet

Site Map with Previous Investigation Locations at SD017
Cannon Air Force Base,
New Mexico

Drawn By: DPG	Date: 7/8/2016	Project No: 23446539	Figure 2-6
Checked By: MS	Revision: 0		

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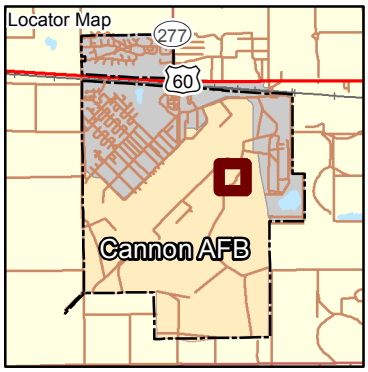

Legend

- Approximate Previous Soil Sample Location (URS 2010)
- Approximate Previous Soil Sample Location (WCC 1992)
- Approximate Previous Soil Sample Location (Walk, Haydel & Associates 1990)
- Approximate Previous Soil Sample Location (Walk, Haydel & Associates 1987)
- Site Boundary
- Base Boundary

N

200 100 0 200 Feet

Site Map with Previous Investigation Locations at SD020

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 7/8/2016	Project No: 23446539	Figure 2-7
Checked By: MS	Revision: 0		

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3.1 RFI OBJECTIVE

The overall objective of the RFI was to reevaluate the background value for arsenic at Cannon AFB and, if necessary, collect additional analytical data to allow for a statistical analysis of arsenic at the individual sites included in this RFI. Arsenic background soil sample locations, site specific soil sample locations, and soil sample analytical parameters were presented in the Work Plan for RCRA Facility Investigation at Twelve Sites at Cannon Air Force Base (FPM/URS 2015a). The work plan was reviewed and approved by NMED on December 30, 2015 (NMED 2015b).

3.2 RFI APPROACH

A background study was completed in 1997 to determine the naturally occurring concentrations of metals and pesticides in soils at Cannon AFB (W-C 1997). Soil samples were collected from four surface soil locations and ten soil boring locations along the western and southern borders of Cannon AFB and analyzed for TAL metals and pesticides. Additionally, data from two surface soil samples collected off Base in a field west of the Chavez Housing Area in a prior investigation (W-C 1994) were included in the background study data set. The background level established for arsenic in soils (UTLs) at Cannon AFB was 3.6 mg/kg for surface soils and 4.3 mg/kg for subsurface soils (which exceeds the NMED SSL for arsenic [4.25 mg/kg]).

Arsenic was the only COPC identified at SD012, SD017, and SD020. While arsenic concentrations at these sites exceed the historically calculated background levels established for Cannon AFB, the concentrations identified are not considered to be representative of site-related contamination.

Based on the limited aerial extent of sampling for the 1997 background study, the calculated background values for arsenic may not have been representative of the arsenic concentrations naturally occurring in the soils Base-wide at Cannon AFB. In order to provide a more representative background concentration for arsenic, additional soil samples were collected from locations where no known historical use was suspected to have impacted the soils. These locations were determined by reviewing the location of the SWMUs identified in the RCRA permit for Cannon AFB and historical investigations, reviewing aerial photographs, and comparing these locations to the soil sample locations from the 1997 background investigation.

As part of the modifications included in the approval letter (NMED 2016), background samples were also analyzed for thallium. This was based on the identification of thallium as a chemical of concern (COC) at Cannon AFB sites SW006 and WL102. Because thallium was not a COC identified for SD012, SD017, or SD020, discussions regarding thallium in this RFI will be limited to the calculation of a new surface and subsurface background concentration.

As part of the sampling for the background study, ten soil boring locations were advanced to approximately 10 feet bgs. Soil samples were collected from the surface (0 to 0.5 feet bgs), 3 to 5 feet bgs, and 8 to 10 feet bgs in accordance with the approved work plan. The samples were analyzed for arsenic and thallium. The results of the soil sampling were added to the data

obtained during the 1997 background study and the background concentrations of arsenic were reevaluated.

Arsenic in soils at SD012, SD017, and SD020 was reevaluated based on the recalculated background concentrations for arsenic at Cannon AFB. If arsenic concentrations at these sites did not exceed the recalculated background UTL for arsenic, the background sampling and comparison results were presented in this RFI. If arsenic concentrations at SD012, SD017, and/or SD020 exceeded the background UTLs, additional arsenic samples were collected to increase the data available for statistical analysis. The intent of the sampling was to increase the number of data points for arsenic at each site. Soil samples (if required following the comparison to background concentrations) were collected at depths similar to historical sampling to provide continuity of data for statistical analysis. The number of samples collected from each site varied based on the number of samples required to meet USEPA guidelines for the statistical evaluation of background samples.

Soil samples were collected at sites where the concentrations of arsenic exceeded the background UTL and analyzed for arsenic in accordance with the approved work plan and supplemental sampling plan. Concentrations of arsenic were evaluated for potential risks by comparing maximum detected concentrations to risk-based screening criteria. This conservative screening approach identified sites that pose no unacceptable risk under highly conservative exposure assumptions and, therefore, warrant no further evaluation or action. This approach also identified sites that may warrant further evaluation based on exceedance of stringent risk-based concentrations.

The results of these evaluations were used to make recommendations regarding the two alternatives stated above. The recommendations were made on the following basis:

- If no threat to human health exists above residential screening criteria and no potential threat to the environment is apparent, then CAC without controls is recommended.
- If a threat to human health exists above residential screening criteria and/or a potential threat to the environment is apparent, then an accelerated corrective measure will be designed and executed to reduce contaminants to concentrations below screening levels and allow the site to achieve CAC without controls.

3.3 DEVELOPMENT OF SITE CONCEPTUAL EXPOSURE MODELS

Site conceptual exposure models (SCEMs) identify chemical release sources and transport media, potential human or ecological receptors, and intake-mechanisms for each potential exposure pathway. An exposure pathway describes the means by which release, transport, and intake by receptor populations of COPCs occurs. An exposure pathway consists of four necessary elements:

- A source and transport mechanism of chemical release to the environment
- An environmental exposure medium for the released chemical (e.g., surface or subsurface soil)

- A point of potential human or ecological exposure to transported chemicals (e.g., a domestic drinking water well)
- A human or ecological intake mechanism (e.g., inhalation or ingestion) at the point of exposure

All four elements must be present for an exposure pathway to be complete and for chemical exposure to occur. In the SCEMs, potentially significant pathways are denoted with solid lines.

Exposure pathways were evaluated with respect to potential chemical sources at SD012, SD017, and SD020. Exposure pathways were considered to be potentially complete if there were chemical release and transport mechanisms and identified exposure points and receptors for that exposure pathway. Incomplete exposure pathways do not result in actual exposure to human or ecological receptors and, therefore, do not pose a potential risk. Partial or possible pathways are those that could conceivably be complete and result in an exposure, but the resulting exposure would be at levels that would not pose a significant risk.

3.4 EVALUATION OF BACKGROUND CONCENTRATIONS

Soils are derived from parent geologic materials as a result of physical, chemical, and biological processes. The soil system is naturally a highly heterogeneous matrix of inorganic and organic components. The relative proportions of these components are dependent upon factors influencing soil formations, such as topography, climate, depositional processes, and time (Sposito and Page 1984). Total concentrations of metals in soils may vary depending upon location; for example, at the surface, soils are influenced by leaching, runoff, atmospheric deposition, and biotic uptake, as well as anthropogenic activity. The ranges of naturally occurring or "background" concentrations of metals in soils vary greatly due to the composition of parent material; therefore, care must be taken in the interpretation of metals data generated during an investigation.

Arsenic concentrations in the surface (0 to 1 foot interval) and subsurface (1 to 10 foot interval) soil were compared to newly established background concentrations to determine whether detected concentrations were site-related. The approach compared the maximum concentrations detected at a given site to the 95-percent UTL of the calculated background concentrations. Using this method, individual samples at sites with high concentrations relative to background levels (i.e., which could represent a site-related release) could be identified.

3.5 HUMAN HEALTH SCREENING-LEVEL EVALUATION METHODOLOGY

This section describes the approach used in the human health screening-level evaluation for SD012, SD017, and SD020. A preliminary human health screening evaluation was conducted by comparing chemical concentrations found at the site with New Mexico Environmental Department (NMED) human health Soil Screening Levels (SSLs) for residential exposure. Where SSLs were not available, SSLs were calculated using the methodology outlined in NMED guidance (NMED 2015a). While the sampling completed for this RFI was limited to analysis of

soil samples for arsenic and thallium, the data sets used in the risk screening were comprised of historical and current analytical results from samples collected from 0 to 10 feet bgs. The soil dataset used for the human health screening evaluation is presented **Appendix E**.

Preliminary human health screening evaluations for SD012, SD017, and SD020 are presented in **Section 5.5.**

3.5.1 Preliminary Site Conceptual Exposure Models

One of the first steps in formulating a risk assessment for a site is developing a conceptual model (SCEM) of the site that identifies relevant exposure pathways and exposure scenarios (**Section 3.3**). The preliminary SCEM for SD012, SD017, and SD020 is presented in **Figure 3-1**. Three groups of human receptors were identified as potentially applicable to this site and evaluated in the risk screening:

- Current/future site worker (also referred to as an industrial/occupational worker)
- Future resident
- Future construction worker

The primary routes of exposure for the identified receptors evaluated in the risk screen are ingestion of contaminated soil, dermal contact with contaminated soil, and inhalation of airborne soil particulates. Volatile compounds were not considered the primary contaminants at SD012, SD017, or SD020; therefore, volatile emissions and vapor intrusion are incomplete exposure pathways. There are no current residents or construction workers at any of the sites; therefore, the current pathways are incomplete. The future residential scenario is considered to be protective of other short term exposures such as site visitor, trespassers, and hypothetical future recreational users should land use change in the future. There are no current fulltime active duty personnel working at any of these sites; therefore, the current site worker pathways are shown as incomplete.

There are no surface water bodies associated with SD017 or SD020. SD012 is a playa that periodically contains water due to runoff from the surrounding area. However, the pathway was considered to be incomplete because water is present at SD012 only following major precipitation events. Therefore, direct exposure to surface water is considered to be an incomplete pathway for SD012, SD017, and SD020. Groundwater is not readily accessible at any of the sites included in this RFI due to the depth to groundwater (greater than 287 feet bgs). Additionally, the soil-to-groundwater pathway is considered to be incomplete, based on the following lines of evidence:

- Cannon AFB is located in a semiarid environment with low rates of precipitation.
- The underlying Ogallala Formation contains fractured caliche layers and cemented soils that restrict, but do not prevent, vertical migration of contaminants.
- The presence of clay minerals throughout the formation attenuates contaminants by adsorption.

Based on the above lines of evidence, the surface water and soil-to-groundwater pathways are incomplete and are not addressed in this evaluation. The primary routes of exposure are ingestion of contaminated soil, dermal contact with contaminated soil, and inhalation of airborne soil particulates.

3.5.2 Target Risk Levels

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and RCRA (USEPA 1991), remedial action is generally warranted when cumulative cancer risk exceeds 1E-04 or noncancer hazard index exceeds 1. The range between 1E-06 and 1E-04 (1 in 1,000,000 to 1 in 10,000) is the risk management range for cancer risk. NMED SSLs are based on 1E-05 (1 in 100,000) target excess cancer risk (per chemical) or a target hazard quotient (HQ) of 1 (per chemical) for noncarcinogens. Exceeding NMED SSLs means further evaluation of chemical concentrations and exposure assumptions may be warranted.

3.5.3 Comparison of Arsenic Concentrations to Background Levels

A comparison of site arsenic concentrations to appropriate background concentrations was conducted prior to evaluation against NMED's SSLs. If present at levels indicative of natural background, arsenic was eliminated as a COPC. The general process is a tiered approach.

Step 1: Compare the site maximum arsenic concentration to the background UTL from **Table 2-1**. If the maximum detected site concentration was below the UTL, then site concentrations were considered to be background and no additional action was required. If the site maximum was greater than the UTL, Step 2 was completed.

Step 2: Compare the range of detected site arsenic concentrations to the range of detected background concentrations. If the site range was within the range of detected background concentrations, then the site concentrations were considered to be background and no additional action was required. If the site range exceeded the background range, Step 3 was completed.

Step 3: A two-sample hypothesis test was used to compare the distributions of the site data to the distributions of background data to determine if site concentrations were elevated compared with background. The two-sample hypothesis test determines if the analytical data for the inorganic being evaluated (arsenic) is comparable to the analytical data collected as part of the background evaluation. If the distributions of the site data are comparable then concentrations of the inorganic (arsenic) are deemed to be within background levels and are not considered to represent an exceedance of NMED residential SSLs. If the distributions of the site data are not comparable then concentrations of the inorganic (arsenic) are deemed to exceed background levels and additional actions may be required unless further lines of evidence can be provided to justify the exclusion of the inorganic. The two-sample hypothesis test was completed using ProUCL 5.0 (USEPA 2013).

The background comparison results are provided in **Section 5.2**.

3.5.4 Soil Exposure Intervals

NMED guidance (NMED 2015a) assumes residents could be exposed to surface and subsurface soils during home maintenance activities, yard work, landscaping, and outdoor play activities, and NMED guidance specifies an exposure interval of 0 to 10 feet bgs. NMED guidance assumes construction workers are involved in digging, excavation, maintenance, and building construction projects and could be exposed to surface as well as subsurface soil. Therefore, a soil exposure interval of 0 to 10 feet bgs is considered appropriate for the construction worker. NMED guidance also assumes the industrial/occupational worker activities occur at or near the surface at not greater than 1 foot bgs. Therefore, the soil exposure interval for industrial/occupational worker is defined as 0 to 1 foot bgs.

3.5.5 Screening Exposure Concentration

In accordance with NMED guidance (NMED 2015a), the maximum detected concentration in the soil exposure interval applicable to each receptor was selected as the screening exposure concentration.

3.5.6 Cumulative Human Health Risk Screening

NMED guidance (NMED 2015a) indicates the potential cumulative risks and hazards should be evaluated in the screening evaluation to determine whether further evaluation may be necessary. A human health risk screening was performed in accordance with NMED guidance by comparing maximum chemical concentrations detected at the site with NMED human health SSLs. NMED guidance has published SSLs for a resident, industrial/occupational worker, and construction worker. In the absence of NMED SSLs, SSLs were calculated using the methodology outlined in NMED guidance (NMED 2015a).

SSLs for individual carcinogenic chemicals are based on a cancer risk of 1E-05. SSLs for individual noncarcinogenic chemicals are based on a HQ of 1. Cumulative site screening risks and hazards were calculated as follows:

$$Site\ Screening\ Risk = \left(\frac{C_1}{SSL_1} + \frac{C_2}{SSL_2} + \cdots \frac{C_i}{SSL_i}\right) x\ 10^{-5}$$

$$Site\ Screening\ Hazard\ Index\ (HI) = \left(\frac{C_1}{SSL_1} + \frac{C_2}{SSL_2} + \cdots \frac{C_i}{SSL_i}\right) x\ 1$$

Where:

$C_1 ... C_i$ = Screening exposure concentration for chemical "*1*" to chemical "*i*".

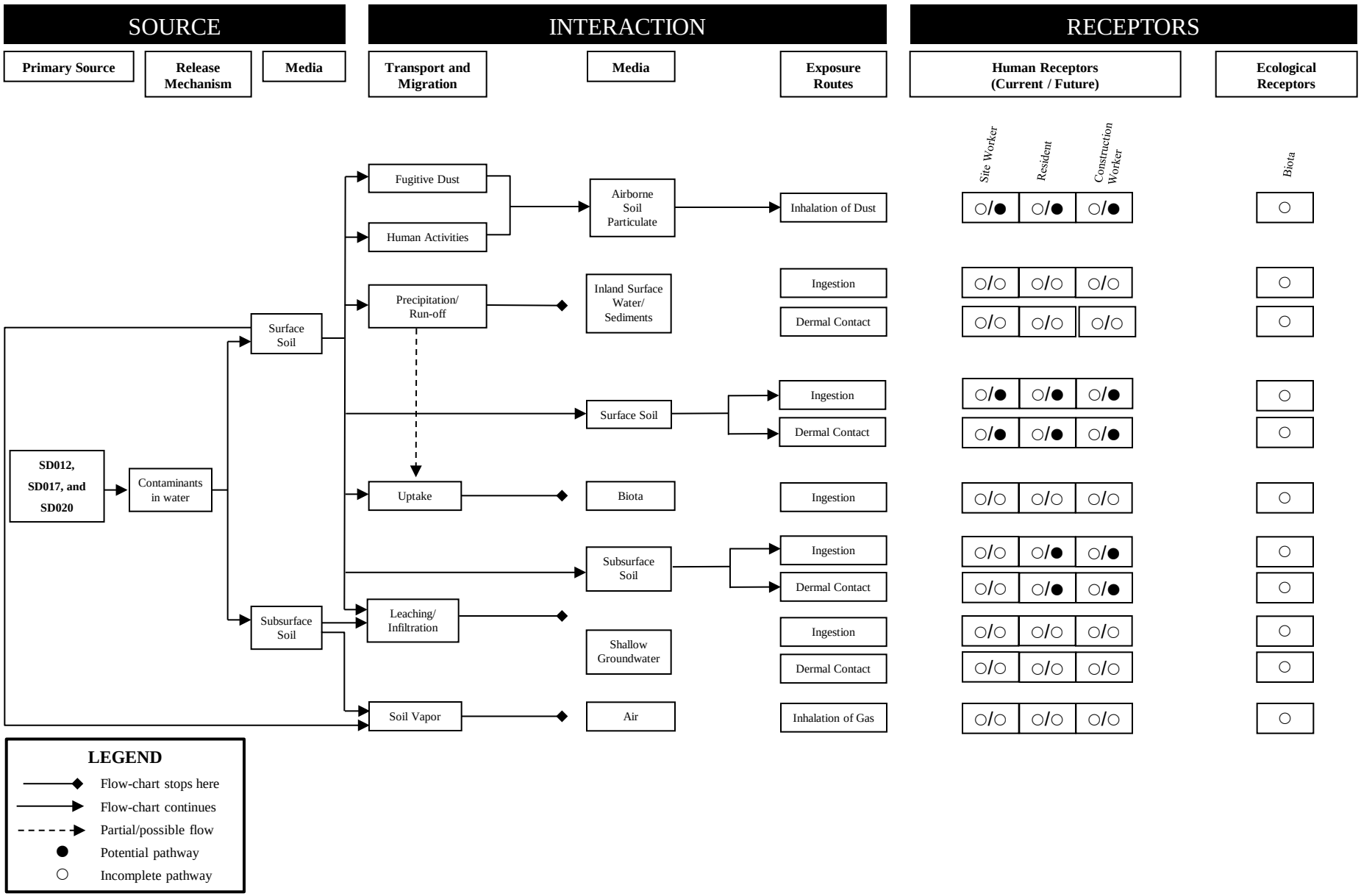
$SSL_1 \ldots SSL_i$ = Soil screening level for chemical "*1*" to chemical "*i*" based on a SSL carcinogenic risk of 1E-05 or noncarcinogenic hazard of 1.

A cumulative risk of 1E-05 or less indicates the carcinogenic risks are acceptable and no further evaluation is warranted. A screening Hazard Index (HI) of 1 or less means that noncarcinogenic effects are acceptable and no further evaluation is necessary.

3.6 ECOLOGICAL SCREENING-LEVEL EVALUATION METHODOLOGY

A preliminary ecological evaluation was conducted in general accordance with NMED's Risk Assessment Guidance for Investigations and Remediation, Volume 2, Tier 1: Screening-Level Ecological Risk Assessment, Phase I, Scoping Assessment during the RCRA Facility Assessment completed for SD012, SD017, and SD020 in 2014 (URS 2014). Based on the absence of ecological risks, no further action regarding an ecological risk assessment was warranted for SD012, SD017, or SD020.

FIGURE 3-1
PRELIMINARY SITE CONCEPTUAL EXPOSURE MODEL for SD012, SD017, and SD020



This section summarizes the field activities completed for this RFI. Sample designations, sampling equipment and procedures, and sample handling and documentation procedures are described in this section. The RFI sample locations and analytical parameters were completed in accordance with the RFI work plan (FPM/URS 2015a) that was reviewed and approved by NMED (NMED 2015b).

4.1 SAMPLING OVERVIEW

4.1.1 Background Soil Sampling

A total of 30 soil samples were collected from 10 soil borings with sample depths ranging from 0.5 to 10 feet bgs. Soil samples were collected during two separate field work events completed as follows:

- Samples from background borings SB01, SB06, SB07, SB08, and SB10 were collected from February 1 to February 2, 2016.
- Samples from background borings SB02, SB03, SB04, SB05, and SB09 were collected from May 1 to May 2, 2016.

At the time of the initial mobilization (February 2016) the flightline waiver was not approved by Cannon AFB. Therefore, the borings located in the flightline could not be sampled. These samples were collected during the second mobilization (May 2016). All samples were analyzed for arsenic and thallium using USEPA Method 6020A. The background soil sample locations are shown on **Figure 4-1**. Soil sampling locations, sample depths, analytical parameters, quality control and matrix spike/matrix spike duplicate sampling locations, and technical rationale for each boring location are summarized in **Table 4-1**.

4.1.2 Arsenic Sampling at SD012

Following completion of the arsenic background sampling, background UTLs were calculated for the surface and subsurface soils at Cannon AFB. The maximum arsenic concentration identified at SD012 was then compared to the newly calculated background concentration to determine if further sampling was required. The arsenic concentrations at SD012 exceeded background UTLs. Therefore, additional surface soil samples were collected from SD012 in accordance with the approved work plan (FPM/URS 2015a). In addition to the approved sample locations, the historical location of the maximum arsenic concentration (C85-SS01) was resampled. This sample was collected to confirm the presence of arsenic at that C85-SS01 and was designated as C85-SS01A. The soil sample locations are depicted on **Figure 4-2**. Soil sampling locations, sample depths, analytical parameters, and technical rationale for each boring location are summarized in **Table 4-2**.

4.1.3 Arsenic Sampling at SD017

Following completion of the arsenic background sampling, background UTLs were calculated for the surface and subsurface soils at Cannon AFB. The maximum arsenic concentration

identified at SD017 was then compared to the newly calculated background concentration to determine if further sampling was required. The arsenic concentrations at SD017 exceeded background UTLs. Therefore, additional soil samples were collected from SD017 in accordance with the approved work plan (FPM/URS 2015a). The soil sample locations are depicted on **Figure 4-3**. Soil sampling locations, sample depths, analytical parameters, and technical rationale for each boring location are summarized in **Table 4-3**.

4.1.4 Arsenic Sampling at SD020

Based on the revised arsenic background concentration calculated based on the data collected as part of the background study, arsenic concentrations at SD020 were below background concentrations. Therefore, no additional soil samples were collected from SD020 in accordance with the approved work plan (FPM/URS 2015a).

4.2 FIELD ACTIVITIES

The following sections describe the field activities completed including: utility locates, surveying, subsurface drilling and soil sampling, field screening and headspace analysis, photographic documentation, sample handling documentation and analysis, and IDW management. All field activities were completed in accordance with the approved RFI work plan (FPM/URS 2015a) and approval with modifications letter from NMED (NMED 2015b).

4.2.1 Utility Locates

Utility clearances were obtained prior to the start of field activities. Underground utilities were marked within the project area and were documented in the field logbook for future use.

4.2.2 Survey of Sampling Locations

Survey coordinates were recorded using a Trimble Geo XH 6100 hand-held global positioning system. Horizontal coordinates were surveyed to within 1 meter of actual locations using North American Datum of 1983.

4.2.3 Soil Sampling

Subsurface samples were collected using direct push drilling methods. Continuous soil samples were collected at all boring locations and began at the ground surface. Soil boring logs, including detailed soil descriptions in accordance with the USCS documenting the collection of each sample were completed, and are included in **Appendix B**.

Discrete soil samples were collected from the designated soil intervals in the work plan, placed into laboratory-provided containers, and wrapped in protective packing material (i.e., foam liners and bubble packing). Soil SCFSs with a soil description in accordance with the USCS documenting the collection of each sample were completed, and are included in **Appendix B**.

4.2.4 Sampling Handling, Documentation, and Analysis

The labeling, preservation, handling, shipping, documentation, and tracking procedures for all samples collected during this investigation at Cannon AFB are described in the following sub-sections.

4.2.4.1 Sample Handling

Samples were collected in laboratory provided containers. Sample identification labels were completed using waterproof ink and attached to each sample. Each sample was labeled with a unique code indicating the site number, sample location number, matrix identifier, and sample depth. Labels included the date and time of sample collection, analysis required, and samplers' initials. Sample labels were supplied by URS. Samples were placed in a cooler for overnight express carrier shipment to the laboratory. A completed and signed CoC was placed in the cooler. Samples were shipped to EMAX Laboratories, Inc. (EMAX).

4.2.4.2 Field Documentation

Field observations and data were recorded using a pen with permanent waterproof ink in a permanently bound, weatherproof field logbook containing consecutively numbered pages, on boring logs, and on SCFSs. The information in the field logbook, on the boring logs, and on the SCFSs included, but was not limited to, the sample location, date and time of sample collection, sample identification code, description of samples (matrix sampled), sample depth, sampling methods, analytical methods, field observations, and personnel present. Each page in the field book was signed by the person making the entry at the end of the day. The SCFSs are provided in **Appendix B**.

4.2.4.3 Sample Chain-of-Custody

Information concerning the custody, transfer, handling, and shipping of samples was recorded on a CoC form. The sampler filled out the CoC form and kept the samples in his possession until he relinquished them to the delivery service (Federal Express).

4.2.5 Investigation-Derived Waste

IDW generated by field activities included soil, decontamination water, personal protective equipment and disposable sampling supplies. These materials were disposed of as follows:

- Soil IDW generated during project field activities was containerized in 55 gallon drums, and temporarily stored in a designated lay down area at Cannon AFB. A composite IDW sample was collected and analyzed for TPH-gasoline range organics, TPH-diesel range organics, TPH-oil range organics and waste characterization parameters (paint filter liquid test and Toxicity Characteristic Leaching Procedure for VOCs, SVOCs, metals, mercury, pesticides, and chlorinated herbicides) per the requirements of the Clovis Regional Landfill. Based on the results of the analyses, the soil was characterized as nonhazardous and disposed of at the Clovis Regional Landfill. Laboratory results and other IDW documentation are provided in **Appendix D**.

- Decontamination water was containerized in a 55-gallon drum and was temporarily stored in a designated laydown area at Cannon AFB. An IDW grab sample was collected and was analyzed for waste characterization parameters in accordance with New Mexico Administrative Code 20.9.8.11. Based on the results of the analyses, the water was characterized as nonhazardous and will be disposed of in accordance with the approved work plan (URS/FPM 2015a). Laboratory results and other IDW documentation are provided in **Appendix D**.
- Personal protective equipment and disposable sampling supplies were disposed of at Cannon AFB as solid waste in municipal waste dumpsters.

TABLE 4-1
SOIL SAMPLE LOCATIONS FOR ARSENIC AND THALLIUM BACKGROUND SAMPLING
CANNON AFB, NEW MEXICO

Sample Location Identification	Approximate Sample Depth Interval (feet bgs)	Analytical Parameters			Technical Rationale
		RCRA Metals (Arsenic and Thallium Only)[1]	Field Duplicate Samples[2]	MS/MSD Samples[3]	
CABAC-SB01	0-0.5	X			Based on the limited aerial extent of sampling for the 1997 background study, the calculated background values for arsenic and thallium may not be representative of the concentrations naturally occurring in the soils Base-wide at Cannon AFB. In order to provide a more representative background concentration for arsenic and thallium, additional soil samples were collected from these locations where no known historical use is suspected to have impacted the soils. These locations were determined by reviewing the location of the SWMUs identified in the RCRA permit for Cannon AFB and historical investigations, reviewing aerial photographs, and comparing these locations to the soil sample locations from the 1997 background investigation.
	3-5	X			
	8-10	X		X	
CABAC-SB02	0-0.5	X			
	3-5	X			
	8-10	X			
CABAC-SB03	0-0.5	X	X		
	3-5	X			
	8-10	X			
CABAC-SB04	0-0.5	X			
	3-5	X			
	8-10	X			
CABAC-SB05	0-0.5	X			
	3-5	X	X		
	8-10	X			
CABAC-SB06	0-0.5	X			
	3-5	X			
	8-10	X			
CABAC-SB07	0-0.5	X			
	3-5	X			
	8-10	X		X	
CABAC-SB08	0-0.5	X			
	3-5	X			
	8-10	X			
CABAC-SB09	0-0.5	X	X		
	3-5	X			
	8-10	X			
CABAC-SB10	0-0.5	X			
	3-5	X			
	8-10	X			
	Totals	**30**	**3**	**2**	

Notes:

[1]Metals analysis via USEPA Method 6020A

[2]Field duplicate samples were collected at a rate of 10% (1 per 10 samples collected) for laboratory analysis.

[3]MS/MSD samples were collected at a rate of 5% (1 per 20 samples collected) for laboratory analysis.

bgs = below ground surface

AFB = Air Force Base

MS/MSD = matrix spike/matrix spike duplicate

RCRA = Resource Conservation and Recovery Act

SWMU = solid waste management unit

USEPA = United States Environmental Protection Agency

X = Sample was collected

TABLE 4-2
SUMMARY OF SAMPLING LOCATIONS AND ANALYTICAL PARAMETERS
STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
CANNON AFB, NEW MEXICO

Sample Location Identification	Approximate Sample Depth Interval (feet bgs)	Analytical Parameters			Technical Rationale
		RCRA Metals (Arsenic Only)[1]	Field Duplicate Samples[2]	MS/MSD Samples[3]	
C85-SS01A	0-0.5	X			This sample was collected to confirm the presence of arsenic in soils at the location of the historical maximum concentration at SD012 (C85-SS01).
CA012-SS02	0-0.5	X			The locations identified were selected to provide a representative sampling population of soils at SD012 and allow for a statistical analysis of the data to be performed. This analysis was utilized to determine if the arsenic present is within the range of concentrations anticipated to be present based on the statistical analysis of the data as it relates to background concentrations.
CA012-SS03	0-0.5	X	X		
CA012-SS04	0-0.5	X			
CA012-SS05	0-0.5	X		X	
CA012-SS06	0-0.5	X			
CA012-SS07	0-0.5	X	X		
CA012-SS08	0-0.5	X			
CA012-SS09	0-0.5	X			
CA012-SS10	0-0.5	X			
CA012-SS11	0-0.5	X			
	Totals	**11**	**2**	**1**	

Notes:

[1]Metals analysis via USEPA Method 6020A

[2]Field duplicate samples were collected at a rate of 10% (1 per 10 samples collected) for laboratory analysis.

[3]MS/MSD samples were collected at a rate of 10% (1 per 10 samples collected) for laboratory analysis.

bgs = below ground surface

AFB = Air Force Base

MS/MSD = matrix spike/matrix spike duplicate

RCRA = Resource Conservation and Recovery Act

USEPA = United States Environmental Protection Agency

X = Sample was collected

TABLE 4-3
SUMMARY OF SAMPLING LOCATIONS AND ANALYTICAL PARAMETERS
OLD ENTOMOLOGY RINSE AREA (SD017)
CANNON AFB, NEW MEXICO

Sample Location Identification	Approximate Sample Depth Interval (feet bgs)	Analytical Parameters			Technical Rationale
		RCRA Metals (Arsenic Only)[1]	Field Duplicate Samples[2]	MS/MSD Samples[3]	
CA017-SB01	0-0.5	X	X		The locations identified were selected to provide a representative sampling population of soils at SD017 and allow for a statistical analysis of the data to be performed. This analysis was utilized to determine if the arsenic present is within the range of concentrations anticipated to be present based on the statistical analysis of the data as it relates to background concentrations.
	4.5-5	X			
	9.5-10	X			
CA017-SB02	0-0.5	X			
	4.5-5	X			
	9.5-10	X			
CA017-SB03	0-0.5	X	X		
	4-4.5	X			
	9.5-10	X			
CA017-SB04[4]	1-2	X		X	
	4.5-5	X			
	9.5-10	X			
CA017-SB05[4]	0.5-1	X			
	4.5-5	X			
	9.5-10	X			
CA017-SB06	0-0.5	X			
	4.5-5	X			
	9.5-10	X			
	Totals	**18**	**2**	**1**	

Notes:

[1]Metals analysis via USEPA Method 6020A

[2]Field duplicate samples were collected at a rate of 10% (1 per 10 samples collected) for laboratory analysis.

[3]MS/MSD samples were collected at a rate of 10% (1 per 10 samples collected) for laboratory analysis.

[4]Gravel was encountered at the surface at these boring locations. Therefore, the soils located immediately beneath the gravel were sampled and considered to represent surface soils.

bgs = below ground surface

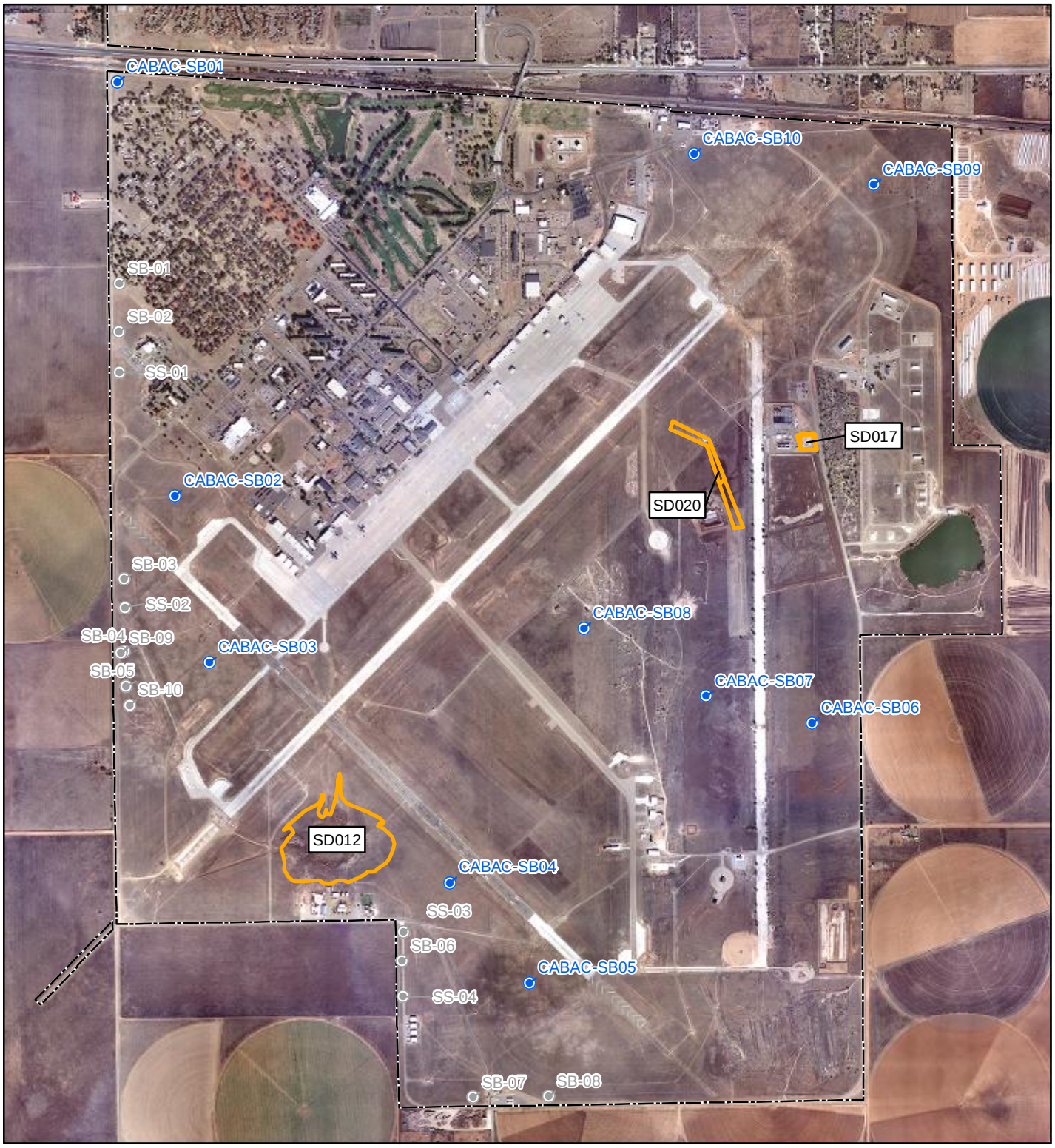
AFB = Air Force Base

MS/MSD = matrix spike/matrix spike duplicate

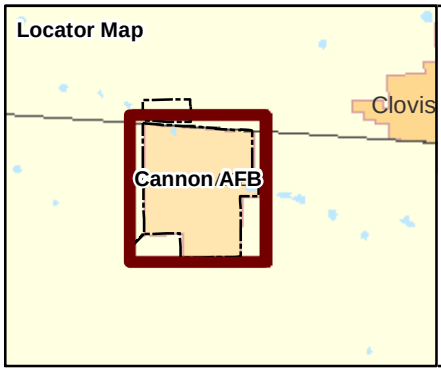
RCRA = Resource Conservation and Recovery Act

USEPA = United States Environmental Protection Agency

X = Sample was collected



Locator Map



Legend

- 2016 Soil Sampling Location
- Previous Background Sampling Locations
- Base Boundary
- Site Boundary

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

2,000 1,000 0 2,000 Feet

Soil Sampling Locations for Arsenic and Thallium Background Sampling

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No. 23446539	Figure 4-1
Checked By: MS	Revision: 0		

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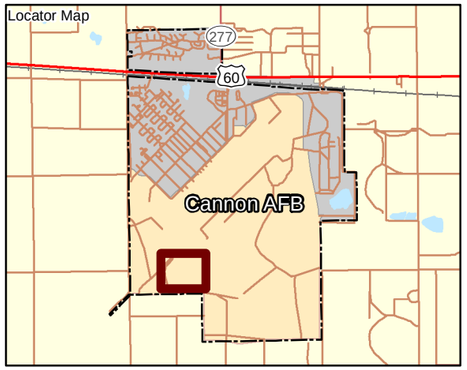

Legend

- 2016 Soil Sampling Location
- Approximate Previous Soil Sample Location
- Site Boundary
- Base Boundary

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

200 100 0 200 Feet

Soil Sampling Locations at SD012
Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No: 23446539	Figure 4-2
Checked By: MS	Revision: 0		

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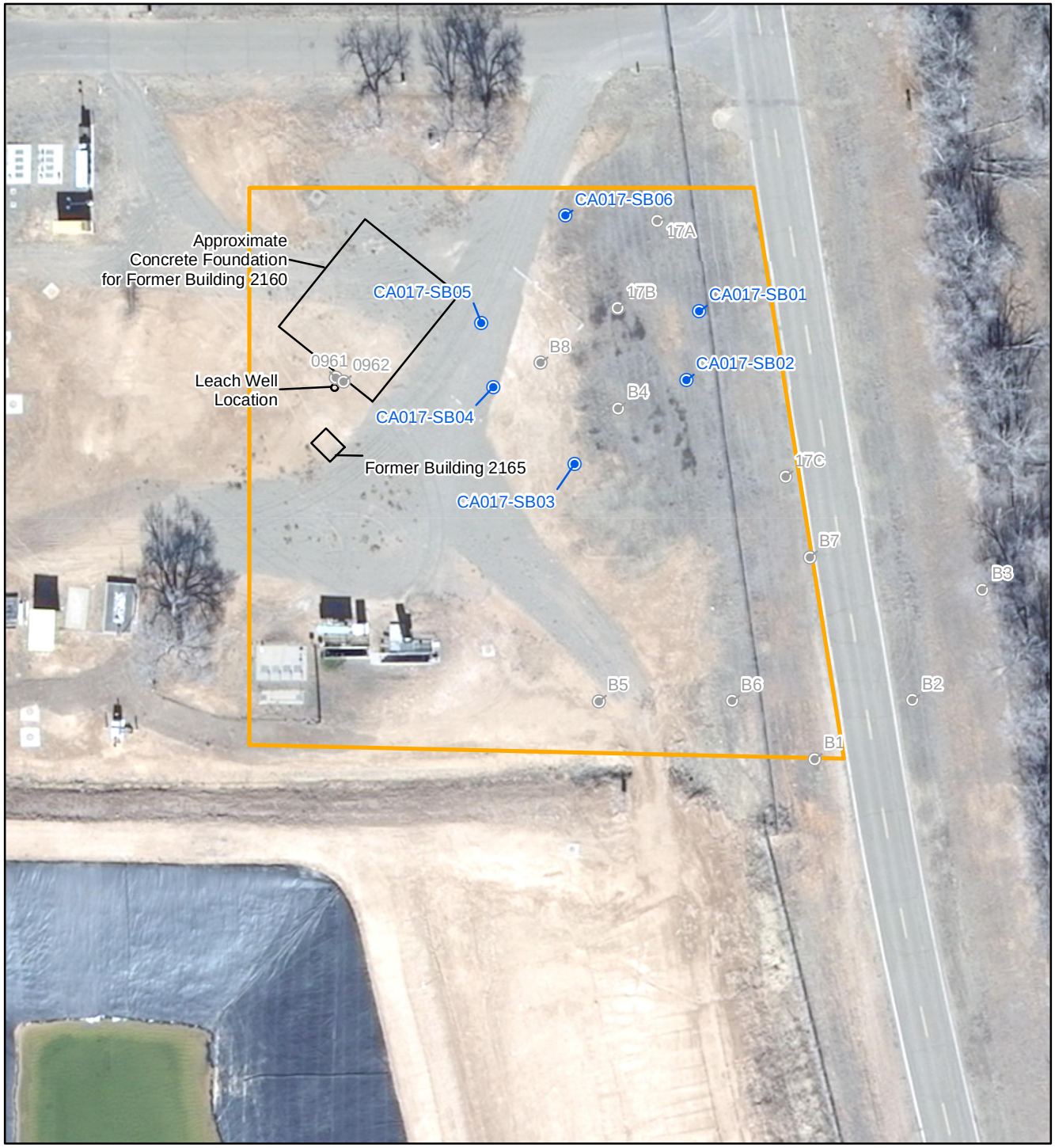

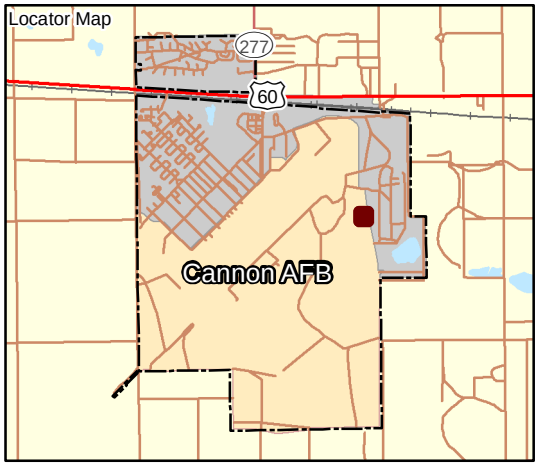

Legend

- 2016 Soil Sampling Location
- Previous Soil Sampling Location
- Site Boundary
- Base Boundary

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

60 30 0 60 Feet

Soil Sampling Locaions at SD017
Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 6/22/2016	Project No: 23446539	Figure 4-3
Checked By: MS	Revision: 0		

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5.1 BORING LOGS

Geologic materials encountered during subsurface soil sampling were described by a geologist on boring logs, included in **Appendix B**. Geologic materials logged at this site consisted of native materials derived from or included in the Ogallala Formation. The geology at the site consists of silty clay overlaying silty sand followed by sand.

5.2 BACKGROUND STUDY RESULTS

5.2.1 Analytical Sampling Results

A total of 30 soil samples were collected for this investigation and sent to EMAX to be analyzed for arsenic and thallium as described in **Section 4** of this report. A summary of the analytical results is as follows:

- Arsenic was detected in all soil samples collected at concentrations ranging from 2.00E+00 mg/kg to 5.36E+00 mg/kg.
- Thallium was detected in all but one sample collected with detected concentrations ranging from 7.56E-02 to 2.37E-01 mg/kg.

The analytical results are presented in **Table 5-1** and shown on **Figure 5-1**. Analytical reports provided by the laboratory (EMAX) and data verification reports are included in **Appendix C**.

5.2.2 Background Concentration Calculations

In order to better define background arsenic and thallium concentrations in soil at Cannon AFB, the background soil samples collected and analyzed for arsenic and thallium were combined with the dataset from the 1997 Background Study and updated UTLs were generated using ProUCL (Version 5.0) (USEPA 2013). These data are presented in **Table 5-2**. The ProUCL inputs and outputs are provided in **Appendix E (E.4 Background Calculations – Tables 1 through 14)**. The process used to generate the updated UTLs for arsenic and thallium is discussed below.

To be consistent with the previous background UTLs, the combined arsenic and thallium background data was evaluated as surface soil and subsurface soil. Similar to the previous background study, surface soil is considered 0 to 1 foot bgs. Subsurface soil is considered 1 foot to 10 feet bgs. The combined 1997 and 2016 datasets were evaluated for outliers in accordance with NMED and USEPA guidance. Specifically, ProUCL was used to generate Q-Q plots to provide a visual indication of potential outliers, and Dixon's test (for datasets less than or equal to 25) or Rosner's test (for datasets greater than 25) were used to statistically evaluate the potential presence of outliers. For arsenic (surface and subsurface soils) and thallium (surface soils), the outlier tests and Q-Q plots indicated there were no outliers in the dataset. For thallium, the outlier test and Q-Q plot for subsurface soils indicated one outlier, an elevated reporting limit of 5.30E+00 mg/kg. This outlier concentration was removed from the subsurface soil dataset and the outlier test rerun. The revised thallium subsurface soil outlier test and Q-Q plot indicated no more outliers in the dataset.

Following the outlier testing, UTLs were generated using ProUCL Version 5.0 (USEPA 2013). The arsenic surface soil dataset appeared to be approximate normal distribution at a 5 percent significance level. Based on this distribution, the surface soil 95 percent UTL with 95 percent coverage was 5.16 mg/kg. Similarly, the subsurface soil dataset for arsenic also had a normal distribution. The 95 percent UCL with 95 percent coverage was 4.38 mg/kg. The revised UTL for arsenic is included in **Table 5-3**.

For thallium, the surface soil dataset appeared to have a normal distribution at a 5 percent significance level. Based on this distribution, the surface soil 95 percent UTL with 95 percent coverage was 0.262 mg/kg. Similarly, the subsurface soil dataset for thallium also had a normal distribution. The 95 percent UTL with 95 percent coverage was 0.172 mg/kg. The revised UTL for thallium is included in **Table 5-3**.

These revised UTLs for arsenic were used in a background comparison for SD012, SD017, and SD020. The background comparisons for remaining metals was completed and approved during previous investigations for this site.

Duplicate samples were not used in the determination of background values for arsenic and thallium. However, in reviewing the data, it was noted the arsenic duplicate sample for Boring SB09 in surface soil was the highest detected concentration and above the NMED residential SSL. To determine if this value was a possible outlier, the surface soil dataset using the duplicate value for Boring SB09 was run through the ProUCL outlier tests. Neither the outlier test nor the Q-Q plot indicated the 5.36E+00 mg/kg arsenic value in the surface soil duplicate sample was an outlier. Therefore, this value falls within the acceptable variability of the dataset and is considered to be representative of background concentrations at Cannon AFB. The ProUCL input and output for this evaluation are included in **Appendix E (E.4 Background Calculations – Tables 1 through 14)**.

5.3 ARSENIC SAMPLING RESULTS

Arsenic in soils at SD012, SD017, and SD020 was reevaluated based on the recalculated background UTLs for arsenic at Cannon AFB. Historical concentrations of arsenic identified at SD012 and SD017 exceeded the calculated background UTLs. Therefore, additional samples were collected to increase the data available for statistical analysis for these sites. Historical concentrations of arsenic at SD020 were below the calculated background concentration. Therefore, no additional soil samples were collected at SD020 in accordance with the approved work plan (FPM/URS 2015a).

5.3.1 SD012 Soil Sample Results

A total of 13 soil samples (11 soil samples and 2 duplicate samples) were collected and analyzed for arsenic from SD012. **Table 5-4** shows the comparison of soil sample results to NMED residential SSLs and the background concentration for arsenic calculated for Cannon AFB (as discussed in **Section 5.2**). Ten of the eleven samples were collected as indicated in the approved work plan. Only one historical arsenic sample exceeded the NMED residential SSL (C85-SS01).

To confirm the presence of arsenic at that sample location, the surface soils were resampled as C85-SS01A.

Laboratory analysis identified arsenic in the soil samples at concentrations ranging from 2.94E+00 to 8.24E+00 mg/kg. Three of the 10 samples exceeded the NMED residential SSL. However, only one of the three samples also exceeded the background arsenic UTLs calculated as part of this RFI (**Section 5.2.2**). This sample was identified as CA012-C85-SS01A-000.5, collected from the surface soils, and identified with an arsenic concentration of 8.24E+00 mg/kg. The arsenic data for SD012 was evaluated against the background data, is presented on **Figure 5-2**, and is discussed further in **Section 5.5.1**.

5.3.2 SD017 Soil Sample Results

A total of 20 soil samples (18 soil samples and two duplicates) were collected and analyzed for arsenic from SD017. **Table 5-5** shows the comparison of soil sample results to NMED residential SSLs and the background UTLs for arsenic calculated for Cannon AFB (as discussed in **Section 5.2**). Laboratory analysis identified arsenic in the soil samples at concentrations ranging from 2.47E+00 to 4.73E+00 mg/kg. Four of the 18 samples exceeded the NMED residential SSL. However, only one of the four samples also exceeded the background arsenic UTLs calculated as part of this RFI (**Section 5.2.2**). This sample was identified as CA017-SB06-005, collected at 5 feet bgs, and identified with an arsenic concentration of 4.47E+00 mg/kg. The arsenic data for SD017 was evaluated against the background data, is presented on **Figure 5-3**, and is discussed further in **Section 5.5.2**.

5.4 DATA REVIEW AND VERIFICATION

The analytical data generated by EMAX were checked for accuracy, precision, representativeness, comparability, and completeness. The data review/verification process for this project consisted of data generation, reduction, and two levels of review. Details of the data review processes are presented in **Appendix C**.

5.5 HUMAN HEALTH SCREENING-LEVEL EVALUATION

The human health screening-level evaluation for SD012, SD017, and SD020 were completed in accordance with the methodology presented in **Section 3.5**. The sampling completed at SD012 and SD017 for this RFI was limited to arsenic in soils. However, the data sets used in the risk screening were comprised of historical and current arsenic analytical results from samples collected from 0 to 10 feet bgs. The residents and construction workers were assumed to be exposed to the 0 to 10-foot interval. Commercial workers were assumed to be exposed to the 0 to 1-foot interval. The soil dataset used for the human health screening evaluation is presented **Appendix E**.

5.5.1 SD012

The soil dataset used for the human health residential and construction worker screening evaluations is presented **Appendix E, Table E-1**. The soil dataset used for the human health

commercial worker screening evaluations is presented **Appendix E, Table E-2**.

The subsurface soil background comparison is presented in **Appendix E**, **Table E-3**. The table shows the maximum subsurface soil arsenic concentration from SD012 (2.80E+00 mg/kg) did not exceed the subsurface soil background UTL of 4.38E+00 mg/kg. Therefore, subsurface soil arsenic concentrations were considered to be within background levels and not evaluated further.

The surface soil background comparison is presented in **Appendix E, Table E-4**. The table shows the maximum surface soil arsenic concentration from SD012 (8.24E+00 mg/kg) exceeded the surface soil background UTL of 5.16E+00 mg/kg. Additionally, the site range exceeded the background range.

Arsenic is often a risk driver even at naturally occurring concentrations. Therefore, the site arsenic population of results was compared to the background population of results using USEPA's ProUCL Version 5.0 (USEPA 2013) to determine if these two populations were the same. Three comparison tests were used: Student t-test, Welch-Satterthwaite, and Wilcoxon-Mann-Whitney. The comparison tests all indicated site surface soil arsenic concentrations did not exceed background concentrations. In accordance with USEPA and NMED guidance, site data was then assessed using the Q-Q plot and Box plot generated by ProUCL. The plots indicated the site data set was within background levels. Therefore, arsenic was not considered to exceed background and not evaluated further in this report. **Appendix E** presents the two sample hypothesis testing results and plots from ProUCL.

Based on the results of the background comparison for subsurface and surface soils, arsenic concentrations at SD012 are within background levels. Therefore, there are no COPCs in soil at SD012 and no further evaluation is necessary.

5.5.2 SD017

The soil dataset used for the human health residential and construction worker screening evaluations is presented **Appendix E, Table E-5**. The soil dataset used for the human health commercial worker screening evaluation is presented **Appendix E, Table E-6**.

The subsurface soil background comparison is presented in **Appendix E**, **Table E-7**. The table shows the maximum subsurface soil arsenic concentration from SD017 (5.60E+00 mg/kg) exceeded the subsurface soil background UTL of 4.38E+00 mg/kg. Additionally, the site range exceeded the background range.

Arsenic is often a risk driver even at naturally occurring concentrations. Therefore, the site arsenic population of results was compared to the background population of results using USEPA's ProUCL Version 5.0 (USEPA 2013) to determine if these two populations were the same. Two comparison tests were used: Gehan and Tarone-Ware. The comparison tests both indicated site subsurface soil arsenic concentrations did not exceed background concentrations. In accordance with USEPA and NMED guidance, the site data was then assessed using the Q-Q plot and Box plot generated by ProUCL. The plots indicated the site data set was within

background levels. Therefore, arsenic in subsurface soil was not considered to exceed background and not evaluated further in this report. **Appendix E** presents the two sample hypothesis testing results and plots from ProUCL.

The surface soil background comparison is presented in **Appendix E, Table E-8**. The table shows the maximum surface soil arsenic concentration from SD017 (4.73E+00 mg/kg) did not exceeded the surface soil background UTL of 5.16E+00 mg/kg. Therefore, surface soil arsenic concentrations were considered to be within background levels and not evaluated further.

Based on the results of the background comparison for subsurface and surface soils, arsenic concentrations at SD017 are within background levels. Therefore, there are no COPCs in soil at SD017 and no further evaluation is necessary.

5.5.3 SD020

The maximum detected concentrations in subsurface and surface soils were compared to background concentrations as detailed in **Section 3.5**. The subsurface soil dataset used for the evaluation is presented **Appendix E, Table E-9**. The surface soil dataset used for the evaluations is presented **Appendix E, Table E-10**. The background values are provided in **Table 2-1.**

The subsurface soil background comparison is presented in **Appendix E, Tables E-11**. The table shows the maximum subsurface soil concentration from SD020 (3.80E+00 mg/kg) did not exceed the subsurface soil background upper tolerance limit (UTL) of 4.38E+00 mg/kg. Therefore, subsurface soil arsenic concentrations were considered to be within background levels and not evaluated further.

The surface soil background comparison is presented in **Appendix E, Tables E-12**. The table shows the maximum surface soil concentration from SD020 (4.6E+00 mg/kg) did not exceed the surface soil background UTL of 5.16E+00 mg/kg. Therefore, surface soil arsenic concentrations were considered to be within background levels and not evaluated further.

Based on the results of the background comparison for subsurface and surface soils, arsenic concentrations at SD020 are within background levels. Therefore, there are no COPCs in soil at SD020 and no further evaluation is necessary.

5.6 SITE CONCEPTUAL EXPOSURE MODEL

A preliminary SCEM was developed for SD012, SD017, and SD020 based on historical site information. The preliminary SCEM is shown on **Figure 3-1**.

5.6.1 SD012

A preliminary SCEM was developed for SD012 based on historical site information and is presented on **Figure 3-1**.

SD012 is a naturally occurring 9-acre playa lake located in the southwestern part of Cannon AFB. Since 1943, stormwater runoff from the flightline has collected in this lake. Stormwater runoff flows toward the center of the site where it either evaporates or percolates into the soil.

Arsenic was the only COPC identified during the 2009 RFI Addendum (URS 2010). Comparison of maximum detected site concentrations to background levels indicated site concentrations were within background levels. Therefore, arsenic was not retained as a COPC for further evaluation. Since there are no COPCs for the site, all exposure pathways were considered incomplete. **Figure 5-4** shows the SCEM for SD012.

5.6.2 SD017

SD017 was located behind Building 2160, pesticide storage building, which was abandoned in October 1983 and demolished in September 1984. During the site's use, pesticide and herbicide application equipment was cleaned in a sink located inside Building 2160. The sink drained into a 3-foot-square and 2-foot-deep pit at the rear of the building. The bottom of the pit was reported to be unlined and open to the soil (W-C 1992).

Arsenic was the only COPC identified during the 2007 RFI (URS 2007) and RFI work plan (FPM/URS 2015a). Comparison of maximum detected site concentrations to background levels indicated site concentrations were within background levels. Therefore, arsenic was not retained as a COPC for further evaluation. Since there are no COPCs for the site, all exposure pathways were considered incomplete. **Figure 5-4** shows the SCEM for SD017.

5.6.3 SD020

SD020 is a shallow, open ditch that begins near the end of the northeastern runway, Runway 4/22, and extends to the southeast under an access road before emptying into an open field. The northwest end of the ditch is marked by a concrete culvert and is surrounded by heavy vegetation. The drainage ditch is approximately 40 feet wide and runs for approximately 550 feet until it reaches the field.

Arsenic was the only COPC identified during the RFI Addendum (URS 2010). Comparison of maximum detected site concentrations to background levels indicated site concentrations were within background levels. Therefore, arsenic was not retained as a COPC for further evaluation. Since there are no COPCs for the site, all exposure pathways were considered incomplete. **Figure 5-4** shows the SCEM for SD020.

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB01-000.5				CABAC-SB01-005				CABAC-SB01-010				CABAC-SB02-000.5				CABAC-SB02-005			
DATE COLLECTED			Residential Soil		February 1, 2016				February 1, 2016				February 1, 2016				May 3, 2016				May 3, 2016			
	Maximum	Frequency	(mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	**4.50E+00**	1.12E-01	5.61E-01		3.09E+00	1.08E-01	5.41E-01		2.85E+00	1.06E-01	5.29E-01		2.64E+00	1.01E-01	5.07E-01		3.75E+00	1.10E-01	5.51E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	2.35E-01	5.61E-02	5.61E-01	J	8.50E-02	5.41E-02	5.41E-01	J	8.60E-02	5.29E-02	5.29E-01	J	1.02E-01	5.07E-02	5.07E-01	J	1.07E-01	5.51E-02	5.51E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.
Red result exceeds NMED Residential Soil Screening Level
< = result is less than the LOD
* DL value is shown if the detection is less than the LOQ
AFB = Air Force Base
DL = Detection Limit
J = Estimated
LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
U = Nondetect

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB02-010				CABAC-SB03-000.5				CABAC-SB03-005				CABAC-SB03-010				CABAC-SB03-200.5[1]			
DATE COLLECTED					May 3, 2016				May 3, 2016				May 3, 2016				May 3, 2016				May 3, 2016			
	Maximum	Frequency	Residential Soil (mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	2.51E+00	1.06E-01	5.32E-01		**4.48E+00**	1.07E-01	5.36E-01		**4.85E+00**	1.13E-01	5.63E-01		2.95E+00	1.06E-01	5.29E-01		3.26E+00	1.03E-01	5.16E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	1.16E-01	5.32E-02	5.32E-01	J	2.09E-01	5.36E-02	5.36E-01	J	9.58E-02	5.63E-02	5.63E-01	J	1.38E-01	5.29E-02	5.29E-01	J	1.32E-01	5.16E-02	5.16E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.
Red result exceeds NMED Residential Soil Screening Level
< = result is less than the LOD
* DL value is shown if the detection is less than the LOQ
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DL = Detection Limit
J = Estimated
LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
U = Nondetect

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB04-000.5				CABAC-SB04-005				CABAC-SB04-010				CABAC-SB05-000.5				CABAC-SB05-005			
DATE COLLECTED			Residential Soil		May 3, 2016				May 3, 2016				May 3, 2016				May 2, 2016				May 2, 2016			
	Maximum	Frequency	(mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	2.72E+00	1.03E-01	5.17E-01		3.20E+00	1.12E-01	5.58E-01		2.52E+00	1.03E-01	5.17E-01		3.76E+00	1.00E-01	5.02E-01		2.48E+00	1.02E-01	5.10E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	1.34E-01	5.17E-02	5.17E-01	J	1.80E-01	5.58E-02	5.58E-01	J	7.56E-02	5.17E-02	5.17E-01	J	1.62E-01	5.02E-02	5.02E-01	J	1.19E-01	5.10E-02	5.10E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.

Red result exceeds NMED Residential Soil Screening Level

< = result is less than the LOD

* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

J = Estimated

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = Qualifier

U = Nondetect

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB05-010				CABAC-SB05-205[1]				CABAC-SB06-000.5				CABAC-SB06-005				CABAC-SB06-010			
DATE COLLECTED			Residential Soil		May 2, 2016				May 2, 2016				February 2, 2016				February 2, 2016				February 2, 2016			
	Maximum	Frequency	(mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	2.37E+00	1.04E-01	5.19E-01		2.83E+00	1.03E-01	5.16E-01		3.32E+00	1.06E-01	5.32E-01		4.01E+00	1.11E-01	5.56E-01		3.03E+00	1.06E-01	5.28E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	1.16E-01	5.19E-02	5.19E-01	J	1.34E-01	5.16E-02	5.16E-01	J	1.42E-01	5.32E-02	5.32E-01	J	1.36E-01	5.56E-02	5.56E-01	J	1.43E-01	5.28E-02	5.28E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.

Red result exceeds NMED Residential Soil Screening Level

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* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

J = Estimated

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = Qualifier

U = Nondetect

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB07-000.5				CABAC-SB07-003.5				CABAC-SB07-010				CABAC-SB08-000.5				CABAC-SB08-005			
DATE COLLECTED					February 2, 2016				February 2, 2016				February 2, 2016				February 2, 2016				February 2, 2016			
	Maximum	Frequency	Residential Soil (mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	4.07E+00	1.08E-01	5.39E-01		3.35E+00	1.11E-01	5.55E-01		2.79E+00	1.09E-01	5.46E-01		**4.74E+00**	1.15E-01	5.73E-01		3.98E+00	1.10E-01	5.49E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	1.68E-01	5.39E-02	5.39E-01	J	1.25E-01	5.55E-02	5.55E-01	J	1.43E-01	5.46E-02	5.46E-01	J	2.37E-01	5.73E-02	5.73E-01	J	9.79E-02	5.49E-02	5.49E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.
Red result exceeds NMED Residential Soil Screening Level
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* DL value is shown if the detection is less than the LOQ
AFB = Air Force Base
DL = Detection Limit
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LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
U = Nondetect

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB08-010				CABAC-SB09-000.5				CABAC-SB09-005				CABAC-SB09-010				CABAC-SB09-200.5[1]			
DATE COLLECTED			Residential Soil		February 2, 2016				May 2, 2016				May 2, 2016				May 2, 2016				May 2, 2016			
	Maximum	Frequency	(mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	3.13E+00	1.05E-01	5.24E-01		3.67E+00	1.07E-01	5.35E-01		3.85E+00	1.03E-01	5.17E-01		3.25E+00	1.02E-01	5.11E-01		**5.36E+00**	1.04E-01	5.22E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	1.27E-01	5.24E-02	5.24E-01	J	1.73E-01	5.35E-02	5.35E-01	J	1.39E-01	5.17E-02	5.17E-01	J	<	1.02E-01	5.11E-01	U	2.37E-01	5.22E-02	5.22E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.
Red result exceeds NMED Residential Soil Screening Level
< = result is less than the LOD
* DL value is shown if the detection is less than the LOQ
AFB = Air Force Base
DL = Detection Limit
J = Estimated
LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
U = Nondetect

TABLE 5-1
ARSENIC AND THALLIUM BACKGROUND STUDY ANALYTICAL RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CABAC-SB10-000.5				CABAC-SB10-004.5				CABAC-SB10-010			
DATE COLLECTED			Residential Soil		February 2, 2016				February 2, 2016				February 2, 2016			
	Maximum	Frequency	(mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																
Arsenic	5.36E+00	33 / 33	4.25E+00	NMED	3.33E+00	1.07E-01	5.37E-01		2.00E+00	1.04E-01	5.22E-01		3.86E+00	1.10E-01	5.50E-01	
Thallium	2.37E-01 J	32 / 33	7.82E-01	NMED	1.54E-01	5.37E-02	5.37E-01	J	9.00E-02	5.22E-02	5.22E-01	J	9.28E-02	5.50E-02	5.50E-01	J

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

[1]Duplicate samples.

Red result exceeds NMED Residential Soil Screening Level

< = result is less than the LOD

* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

J = Estimated

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = Qualifier

U = Nondetect

TABLE 5-2
HISTORICAL AND CURRENT ARSENIC AND THALLIUM BACKGROUND SAMPLING RESULTS
CANNON AFB, NEW MEXICO

HISTORICAL BACKGROUND DATA FROM 1997 STUDY[1]									
Sample Location	Field Identification	Date Collected	Sample Depth (feet bgs)	Arsenic			Thallium		
				Result[2] (mg/kg)	Reporting Limit (mg/kg)	Qualifier	Result[2]	Reporting Limit (mg/kg)	Qualifier
SS01	CAN-BKG-SS01-0001	14-Jul-97	0-0.5	1.90E+00	1.00E+00		5.50E-01	1.10E+00	U
SS02	CAN-BKG-SS02-0001	14-Jul-97	0-0.5	2.10E+00	1.00E+00		6.00E-01	1.20E+00	U
SS03	CAN-BKG-SS03-0001	14-Jul-97	0-0.5	1.70E+00	1.00E+00		5.00E-01	1.00E+00	U
SS04	CAN-BKG-SS04-0001	14-Jul-97	0-0.5	1.80E+00	1.00E+00		6.00E-01	1.20E+00	U
SB01	CAN-BKG-SB01-0001	16-Jul-97	0-1	1.80E+00	1.00E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB01-0005	16-Jul-97	3-5	3.00E+00	1.10E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB01-0010	16-Jul-97	8-10	3.50E+00	2.10E+00		1.05E+00	2.10E+00	U
SB02	CAN-BKG-SB02-0001	16-Jul-97	0-0.5	1.50E+00	1.00E+00		5.00E-01	1.00E+00	U
	CAN-BKG-SB02-0005	16-Jul-97	3-5	2.70E+00	1.10E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB02-0010	16-Jul-97	8-10	3.50E+00	1.10E+00		5.50E-01	1.10E+00	U
SB03	CAN-BKG-SB03-0001	15-Jul-97	0-0.5	2.20E+00	1.00E+00		5.00E-01	1.00E+00	U
	CAN-BKG-SB03-0005	15-Jul-97	3-5	2.60E+00	1.10E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB03-0010	15-Jul-97	8-10	1.10E+00	2.20E+00	U	1.10E+00	2.20E+00	U
SB04	CAN-BKG-SB04-0010	15-Jul-97	8-10	3.10E+00	2.20E+00		1.10E+00	2.20E+00	U
SB05	CAN-BKG-SB05-0001	15-Jul-97	0-0.5	2.70E+00	1.00E+00		5.00E-01	1.00E+00	U
	CAN-BKG-SB05-0005	15-Jul-97	3-5	2.20E+00	1.10E+00		6.00E-01	1.20E+00	U
	CAN-BKG-SB05-0010	15-Jul-97	8-10	2.00E+00	2.10E+00	J	1.05E+00	2.10E+00	U
SB06	CAN-BKG-SB06-0001	15-Jul-97	0-0.5	2.20E+00	1.00E+00		5.00E-01	1.00E+00	U
	CAN-BKG-SB06-0005	15-Jul-97	3-5	2.50E+00	1.10E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB06-0010	15-Jul-97	8-10	2.10E+00	1.10E+00		7.50E-01	1.50E+00	U
SB07	CAN-BKG-SB07-0001	15-Jul-97	0-1	2.60E+00	1.00E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB07-0005	15-Jul-97	3-5	3.60E+00	5.30E+00	J	2.65E+00	5.30E+00	U
	CAN-BKG-SB07-0010	15-Jul-97	8-10	1.80E+00	1.10E+00		5.50E-01	1.10E+00	U
SB08	CAN-BKG-SB08-0001	15-Jul-97	0-0.5	3.30E+00	1.00E+00		5.00E-01	1.00E+00	U
	CAN-BKG-SB08-0005	15-Jul-97	3-5	3.30E+00	1.10E+00		5.50E-01	1.10E+00	U
	CAN-BKG-SB08-0010	15-Jul-97	8-10	2.60E+00	1.10E+00		5.50E-01	1.10E+00	U
SB10	CAN-BKG-SB10-0001	15-Jul-97	0-0.5	2.40E+00	1.00E+00		5.00E-01	1.00E+00	U
	CAN-BKG-SB10-0005	15-Jul-97	3-5	3.30E+00	1.10E+00		5.50E-01	1.10E+00	U
OFS1	CANOFS-OFS1-0000	10-Dec-91	0-0.5	1.80E+00	NA	J	1.10E-01	2.20E-01	U
OFS2	CANOFS-OFS2-0000	10-Dec-91	0-0.5	1.80E+00	NA	J	1.10E-01	2.20E-01	U
2016 BACKGROUND SAMPLING RESULTS[3]									
Sample Location	Field Identification	Date Collected	Sample Depth (feet bgs)	Arsenic			Thallium		
				Result (mg/kg)	LOQ (mg/kg)	Qualifier	Result (mg/kg)	LOQ (mg/kg)	Qual
CABAC-SB01	CAN-BAC-SB01-000.5	1-Feb-16	0-0.5	4.50E+00	5.61E-01		2.35E-01	5.61E-01	J
	CAN-BAC-SB01-005	1-Feb-16	3-5	3.09E+00	5.41E-01		8.50E-02	5.41E-01	J
	CAN-BAC-SB01-010	1-Feb-16	8-10	2.85E+00	5.29E-01		8.60E-02	5.29E-01	J
CABAC-SB02	CAN-BAC-SB02-000.5	3-May-16	0-0.5	2.64E+00	5.07E-01		1.02E-01	5.07E-01	J
	CAN-BAC-SB02-005	3-May-16	3-5	3.75E+00	5.51E-01		1.07E-01	5.51E-01	J
	CAN-BAC-SB02-010	3-May-16	8-10	2.51E+00	5.32E-01		1.16E-01	5.32E-01	J
CABAC-SB03	CAN-BAC-SB03-000.5	3-May-16	0-0.5	4.48E+00	5.36E-01		2.09E-01	5.36E-01	J
	CAN-BAC-SB03-005	3-May-16	3-5	4.85E+00	5.63E-01		9.58E-02	5.63E-01	J
	CAN-BAC-SB03-010	3-May-16	8-10	2.95E+00	5.29E-01		1.38E-01	5.29E-01	J
CABAC-SB04	CAN-BAC-SB04-000.5	3-May-16	0-0.5	2.72E+00	5.17E-01		1.34E-01	5.17E-01	J
	CAN-BAC-SB04-005	3-May-16	3-5	3.20E+00	5.58E-01		1.80E-01	5.58E-01	J
	CAN-BAC-SB04-010	3-May-16	8-10	2.52E+00	5.17E-01		7.56E-02	5.17E-01	J
CABAC-SB05	CAN-BAC-SB05-000.5	2-May-16	0-0.5	3.76E+00	5.02E-01		1.62E-01	5.02E-01	J
	CAN-BAC-SB05-005	2-May-16	3-5	2.48E+00	5.10E-01		1.19E-01	5.10E-01	J
	CAN-BAC-SB05-010	2-May-16	8-10	2.37E+00	5.19E-01		1.16E-01	5.19E-01	J
CABAC-SB06	CAN-BAC-SB06-000.5	2-Feb-16	0-0.5	3.32E+00	5.32E-01		1.42E-01	5.32E-01	J
	CAN-BAC-SB06-005	2-Feb-16	3-5	4.01E+00	5.56E-01		1.36E-01	5.56E-01	J
	CAN-BAC-SB06-010	2-Feb-16	8-10	3.03E+00	5.28E-01		1.47E-01	5.28E-01	J
CABAC-SB07	CAN-BAC-SB07-000.5	2-Feb-16	0-0.5	4.07E+00	5.39E-01		1.68E-01	5.39E-01	J
	CAN-BAC-SB07-005	2-Feb-16	3-5	3.35E+00	5.55E-01		1.25E-01	5.55E-01	J
	CAN-BAC-SB07-010	2-Feb-16	8-10	2.81E+00	5.46E-01		1.48E-01	5.46E-01	J

TABLE 5-2
HISTORICAL AND CURRENT ARSENIC AND THALLIUM BACKGROUND SAMPLING RESULTS
CANNON AFB, NEW MEXICO

2016 BACKGROUND SAMPLING RESULTS[3]									
Sample Location	Field Identification	Date Collected	Sample Depth (feet bgs)	Arsenic			Thallium		
				Result (mg/kg)	LOQ (mg/kg)	Qualifier	Result (mg/kg)	LOQ (mg/kg)	Qual
CABAC-SB08	CAN-BAC-SB08-000.5	2-Feb-16	0-0.5	4.74E+00	5.73E-01		2.37E-01	5.73E-01	J
	CAN-BAC-SB08-005	2-Feb-16	3-5	3.98E+00	5.49E-01		9.79E-02	5.49E-01	J
	CAN-BAC-SB08-010	2-Feb-16	8-10	3.13E+00	5.24E-01		1.27E-01	5.24E-01	J
CABAC-SB09	CAN-BAC-SB09-000.5	2-May-16	0-0.5	3.67E+00	5.35E-01		1.73E-01	5.35E-01	J
	CAN-BAC-SB09-005	2-May-16	3-5	3.85E+00	5.17E-01		1.39E-01	5.17E-01	J
	CAN-BAC-SB09-010	2-May-16	8-10	3.25E+00	5.11E-01		<	5.11E-01	U
CABAC-SB10	CAN-BAC-SB10-000.5	2-Feb-16	0-0.5	3.33E+00	5.37E-01		1.54E-01	5.37E-01	J
	CAN-BAC-SB10-005	2-Feb-16	3-5	2.00E+00	5.22E-01		9.00E-02	5.22E-01	J
	CAN-BAC-SB10-010	2-Feb-16	8-10	3.86E+00	5.50E-01		9.28E-02	5.50E-01	J

Notes:
[1]Results from the historical background study (W-C 1997).
[2] If the analyte was not detected in the soil sample analyzed, one half of the detection limit was utilized for the value for the purposes of calculating a background concentration.
[3]Background samples collected in accordance with the approved work plan (FPM/URS 2015a).
< = less than
AFB = Air Force Base
bgs = below ground surface
J = estimated
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NA = Not Applicable
NMED = New Mexico Environment Department
RCRA = Resource Conservation and Recovery Act
RFI = RCRA Facility Investigation
SSL = Soil Screening Level
U = not detected

TABLE 5-3
REVISED BACKGROUND UTLs FOR ARSENIC AND THALLIUM
CANNON AFB, NEW MEXICO

Surface Soil							
Metal	**Number of Samples**	**Minimum Concentration (mg/kg)**	**Maximum Concentration (mg/kg)**	**Outliers (mg/kg)**	**Distribution**	**UTL (mg/kg)**	**Statistical Test**
Arsenic	24	1.5	4.8	N/A	Approximate Normal	5.16	Normal
Thallium	24	0.102	0.237	N/A	Normal	0.262	Kaplan Meier
Subsurface Soil							
Metals	**Number of Samples**	**Minimum Concentration (mg/kg)**	**Maximum Concentration (mg/kg)**	**Outliers (mg/kg)**	**Distribution**	**UTL (mg/kg)**	**Statistical Test**
Arsenic	43	1.1	4.85	N/A	Normal	4.38	Kaplan Meier
Thallium	42	0.0756	0.18	5.3	Normal	0.172	Kaplan Meier

Notes:

mg/kg = milligrams per kilogram

AFB = Air Force Base

N/A = not applicable

UTL = upper tolerance limit

TABLE 5-4
SD012 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION						CA012-C85-SS01A-000.5				CA012-SS02-000.5				CA012-SS03-000.5				CA012-SS03-200.5				CA012-SS04-000.5			
DATE COLLECTED						May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency	Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																									
Arsenic	8.24E+00	13 / 13	4.25E+00	5.16E+00/ 4.38E+00	NMED	**8.24E+00**	1.24E-01	6.19E-01		3.15E+00	1.05E-01	5.27E-01		3.09E+00	9.97E-02	4.98E-01		3.48E+00	9.95E-02	4.97E-01		3.21E+00	9.95E-02	4.97E-01	

Notes:
NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)
4.54E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.
8.24E+00 = result exceeds NMED Residential SSL and background concentrations.
* DL value is shown if the detection is less than the LOQ
AFB = Air Force Base
DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
SSL = soil screening level
UTL = upper tolerance limit

TABLE 5-4
SD012 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION						CA012-SS05-000.5				CA012-SS06-000.5				CA012-SS07-000.5				CA012-SS07-200.5				CA012-SS08-000.5			
DATE COLLECTED						May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency	Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																									
Arsenic	8.24E+00	13 / 13	4.25E+00	5.16E+00/ 4.38E+00	NMED	2.99E+00	9.96E-02	4.98E-01		**4.39E+00**	1.11E-01	5.56E-01		2.94E+00	1.02E-01	5.09E-01		3.35E+00	1.03E-01	5.13E-01		3.16E+00	1.01E-01	5.05E-01	

Notes:
NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)
4.54E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.
8.24E+00 = result exceeds NMED Residential SSL and background concentrations.
* DL value is shown if the detection is less than the LOQ
AFB = Air Force Base
DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
SSL = soil screening level
UTL = upper tolerance limit

TABLE 5-4
SD012 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION						CA012-SS09-000.5				CA012-SS10-000.5				CA012-SS11-000.5			
DATE COLLECTED						May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency	Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																	
Arsenic	8.24E+00	13 / 13	4.25E+00	5.16E+00/ 4.38E+00	NMED	**4.54E+00**	1.11E-01	5.54E-01		3.93E+00	1.09E-01	5.46E-01		3.05E+00	1.03E-01	5.17E-01	

Notes:
NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)
4.54E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.
8.24E+00 = result exceeds NMED Residential SSL and background concentrations.
* DL value is shown if the detection is less than the LOQ
AFB = Air Force Base
DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
SSL = soil screening level
UTL = upper tolerance limit

TABLE 5-5
SD017 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION			Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	CA017-SB01-001				CA017-SB01-005				CA017-SB01-010				CA017-SB01-201 (duplicate)				CA017-SB02-000.5			
DATE COLLECTED						May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency				Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																									
Arsenic	4.73E+00	20 / 20	4.25E+00	5.16E+00/ 4.38E+00	NMED	**4.73E+00**	1.06E-01	5.30E-01		3.84E+00	1.16E-01	5.80E-01		2.47E+00	1.08E-01	5.39E-01		3.48E+00	1.04E-01	5.21E-01		3.78E+00	1.06E-01	5.29E-01	

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

4.73E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.

4.73E+00 = result exceeds NMED Residential SSL and background concentrations.

* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = Qualifier

SSL = soil screening level

UTL = upper tolerance limit

TABLE 5-5
SD017 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION			Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	CA017-SB02-005				CA017-SB02-010				CA017-SB03-001				CA017-SB03-004.5				CA017-SB03-010			
DATE COLLECTED						May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency				Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																									
Arsenic	4.73E+00	20 / 20	4.25E+00	5.16E+00/ 4.38E+00	NMED	4.15E+00	1.09E-01	5.44E-01		3.37E+00	1.06E-01	5.31E-01		**4.63E+00**	1.05E-01	5.26E-01		2.67E+00	1.04E-01	5.19E-01		2.60E+00	1.07E-01	5.37E-01	

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

4.73E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.

4.73E+00 = result exceeds NMED Residential SSL and background concentrations.

* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = Qualifier

SSL = soil screening level

UTL = upper tolerance limit

TABLE 5-5
SD017 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION						CA017-SB03-201 (duplicate)				CA017-SB04-002				CA017-SB04-005				CA017-SB04-010				CA017-SB05-001			
DATE COLLECTED						May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency	Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																									
Arsenic	4.73E+00	20 / 20	4.25E+00	5.16E+00/ 4.38E+00	NMED	3.83E+00	1.05E-01	5.25E-01		3.39E+00	1.01E-01	5.07E-01		3.22E+00	1.03E-01	5.17E-01		3.76E+00	1.09E-01	5.47E-01		3.65E+00	1.06E-01	5.31E-01	

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

4.73E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.

4.73E+00 : result exceeds NMED Residential SSL and background concentrations.

* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/kg = milligrams per kilogram
NMED = New Mexico Environment Department
Qual = Qualifier
SSL = soil screening level
UTL = upper tolerance limit

TABLE 5-5
SD017 ARSENIC SAMPLING RESULTS
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION			Residential Soil Screening Level (mg/kg)	Arsenic 95% UTL - Background Surface/ Subsurface (mg/kg)	Source	CA017-SB05-005				CA017-SB05-010				CA017-SB06-000_5				CA017-SB06-005				CA017-SB06-010			
DATE COLLECTED						May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency				Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																									
Arsenic	4.73E+00	20 / 20	4.25E+00	5.16E+00/ 4.38E+00	NMED	2.80E+00	9.88E-02	4.94E-01		**4.32E+00**	1.10E-01	5.51E-01		3.65E+00	1.03E-01	5.13E-01		**4.47E+00**	1.08E-01	5.41E-01		2.66E+00	1.06E-01	5.28E-01	

Notes:

NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015 (NMED 2015a)

4.73E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.

4.73E+00 = result exceeds NMED Residential SSL and background concentrations.

* DL value is shown if the detection is less than the LOQ

AFB = Air Force Base

DL = Detection Limit

LOD = Limit of Detection

LOQ = Limit of Quantitation

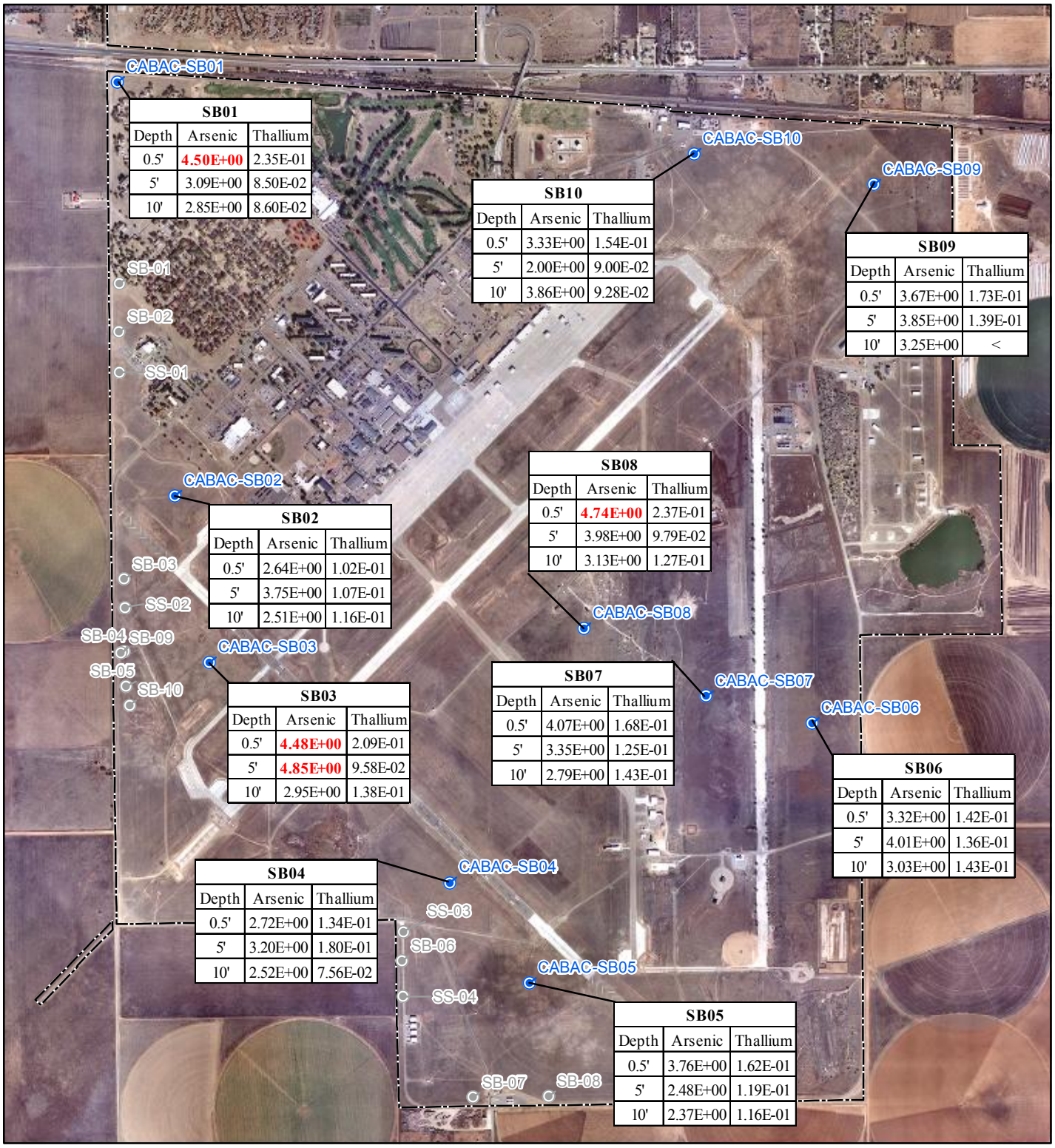
mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = Qualifier

SSL = soil screening level

UTL = upper tolerance limit



SB01

Depth	Arsenic	Thallium
0.5'	**4.50E+00**	2.35E-01
5'	3.09E+00	8.50E-02
10'	2.85E+00	8.60E-02

SB10

Depth	Arsenic	Thallium
0.5'	3.33E+00	1.54E-01
5'	2.00E+00	9.00E-02
10'	3.86E+00	9.28E-02

SB09

Depth	Arsenic	Thallium
0.5'	3.67E+00	1.73E-01
5'	3.85E+00	1.39E-01
10'	3.25E+00	<

SB08

Depth	Arsenic	Thallium
0.5'	**4.74E+00**	2.37E-01
5'	3.98E+00	9.79E-02
10'	3.13E+00	1.27E-01

SB02

Depth	Arsenic	Thallium
0.5'	2.64E+00	1.02E-01
5'	3.75E+00	1.07E-01
10'	2.51E+00	1.16E-01

SB03

Depth	Arsenic	Thallium
0.5'	**4.48E+00**	2.09E-01
5'	**4.85E+00**	9.58E-02
10'	2.95E+00	1.38E-01

SB07

Depth	Arsenic	Thallium
0.5'	4.07E+00	1.68E-01
5'	3.35E+00	1.25E-01
10'	2.79E+00	1.43E-01

SB06

Depth	Arsenic	Thallium
0.5'	3.32E+00	1.42E-01
5'	4.01E+00	1.36E-01
10'	3.03E+00	1.43E-01

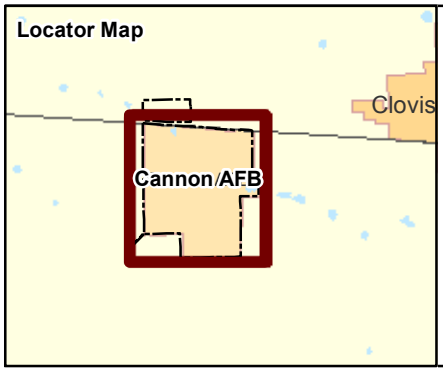
SB04

Depth	Arsenic	Thallium
0.5'	2.72E+00	1.34E-01
5'	3.20E+00	1.80E-01
10'	2.52E+00	7.56E-02

SB05

Depth	Arsenic	Thallium
0.5'	3.76E+00	1.62E-01
5'	2.48E+00	1.19E-01
10'	2.37E+00	1.16E-01

Locator Map



Legend

- Background Soil Sampling Location
- Previous Background Sampling Locations
- Base Boundary

Results are in mg/kg
Red result exceeds NMED Residential Soil Screening Level
< = result is less than the LOD
NMED = New Mexico Environment Department
LOD = Level of Detection
mg/kg = Millograms per Kilogram
Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

2,000 1,000 0 2,000 Feet

Background Sampling Analytical Results

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 7/8/2016	Project No. 23446539	Figure 5-1
Checked By: MS	Revision: 0		

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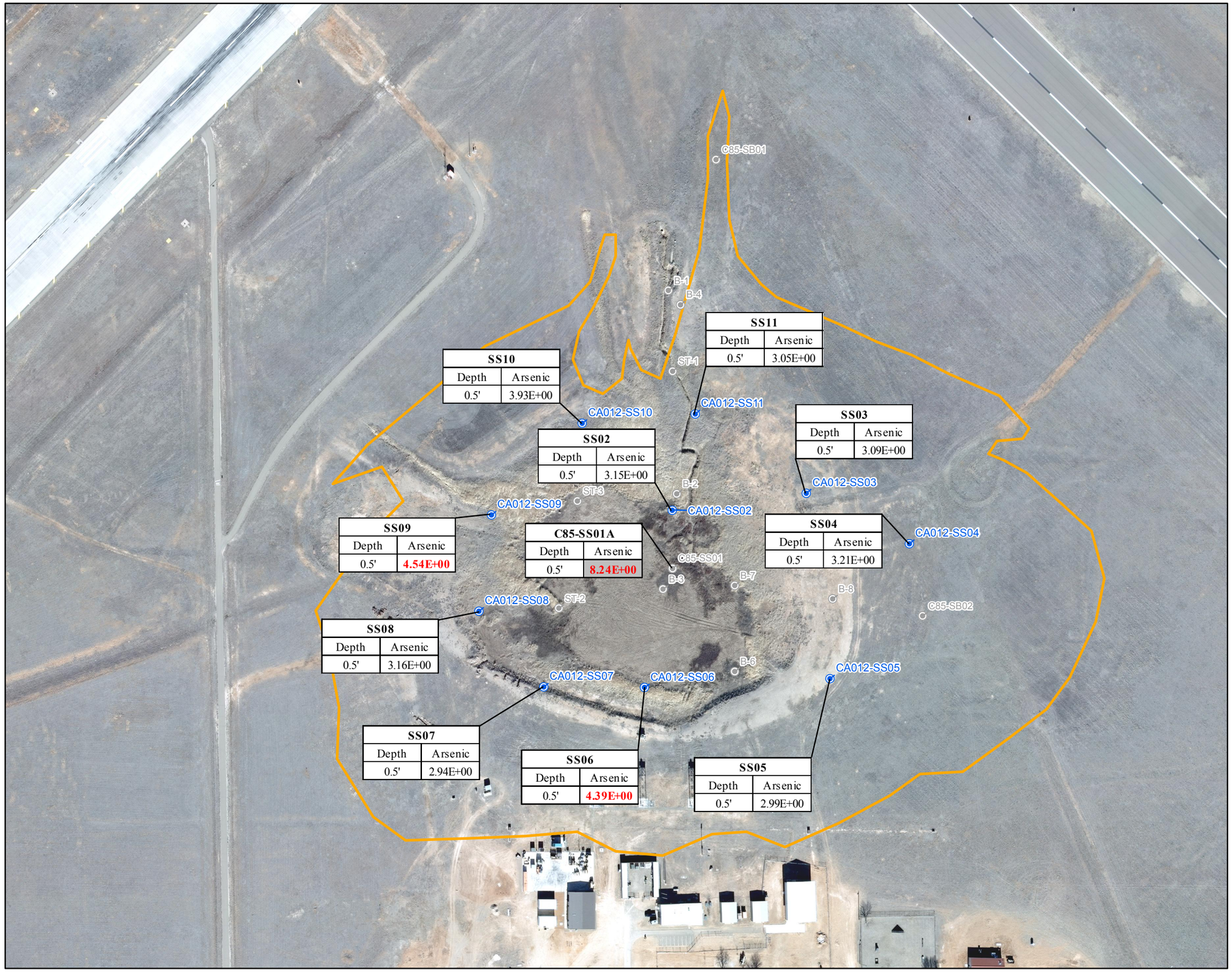

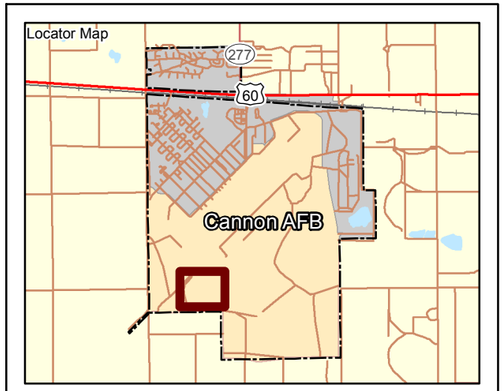

Legend

- 2016 Soil Sampling Location
- Approximate Previous Soil Sample Location
- Site Boundary
- Base Boundary

4.73E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.

4.73E = result exceeds NMED Residential SSL and background concentrations

NMED = New Mexico Environment Department

mg/kg = Millograms per Kilogram

SSL = Soil Screening Level

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N

200 100 0 200 Feet

Arsenic Soil Sampling Results at SD012

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 7/8/2016	Project No: 23446539	Figure 5-2
Checked By: MS	Revision: 0		

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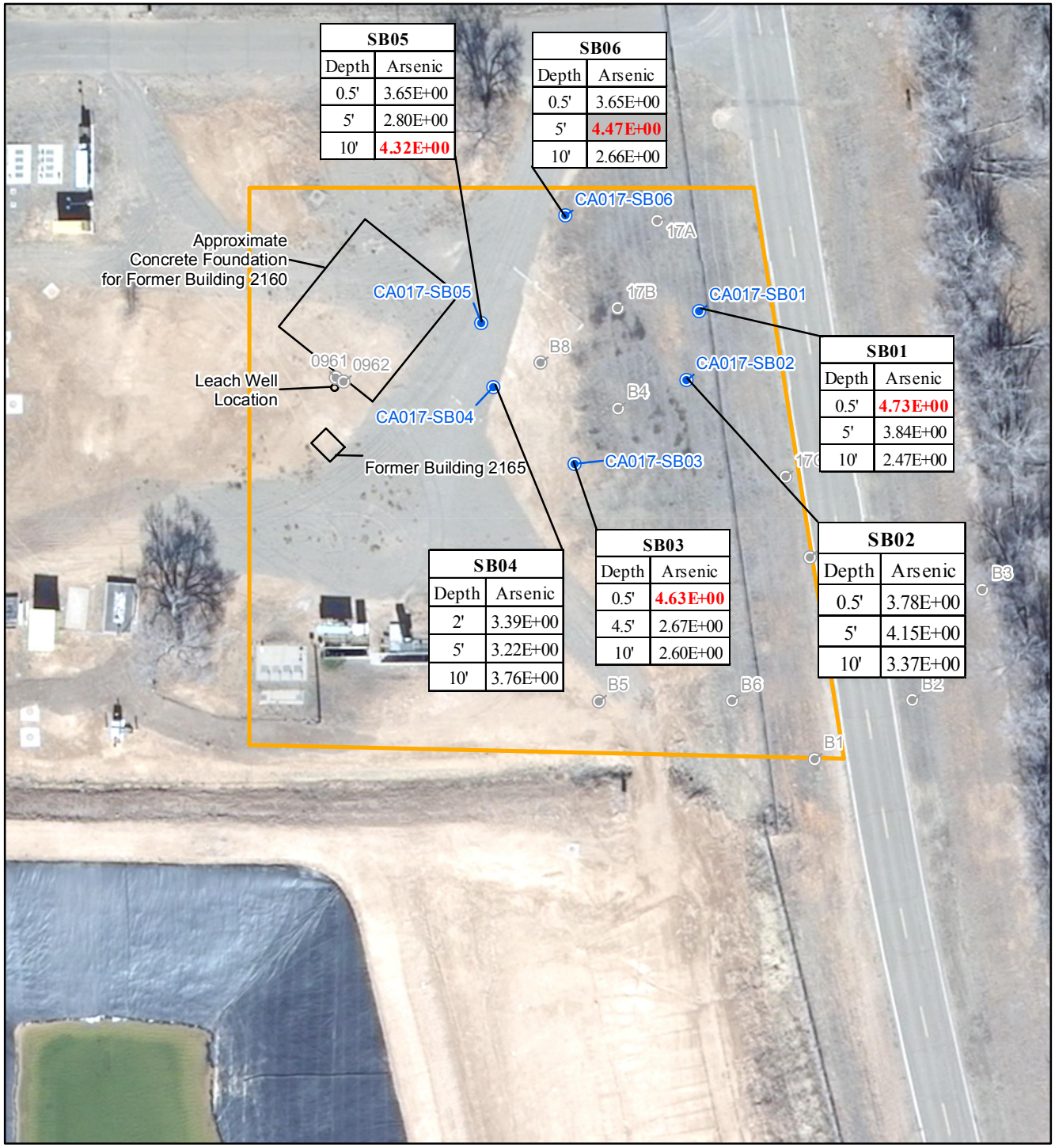

SB05	
Depth	Arsenic
0.5'	3.65E+00
5'	2.80E+00
10'	**4.32E+00**

SB06	
Depth	Arsenic
0.5'	3.65E+00
5'	**4.47E+00**
10'	2.66E+00

SB01	
Depth	Arsenic
0.5'	**4.73E+00**
5'	3.84E+00
10'	2.47E+00

SB04	
Depth	Arsenic
2'	3.39E+00
5'	3.22E+00
10'	3.76E+00

SB03	
Depth	Arsenic
0.5'	**4.63E+00**
4.5'	2.67E+00
10'	2.60E+00

SB02	
Depth	Arsenic
0.5'	3.78E+00
5'	4.15E+00
10'	3.37E+00

Legend

- 2016 Soil Sampling Location
- Previous Soil Sampling Location
- Site Boundary
- Base Boundary

Results are in mg/kg

4.73E+00 = result exceeds NMED Residential SSL but is below calculated background concentrations.

4.73E = result exceeds NMED Residential SSL and background concentrations

NMED = New Mexico Environment Department

LOD = Level of Detection

mg/kg = Millograms per Kilogram

SSL = Soil Screening Level

Map projection: NAD83 State Plane Feet New Mexico East (FIPS 3001)

N 60 30 0 60 Feet

Arsenic Soil Sampling Results at SD017

Cannon Air Force Base, New Mexico

Drawn By: DPG	Date: 7/8/2016	Project No: 23446539	Figure 5-3
Checked By: MS	Revision: 0		

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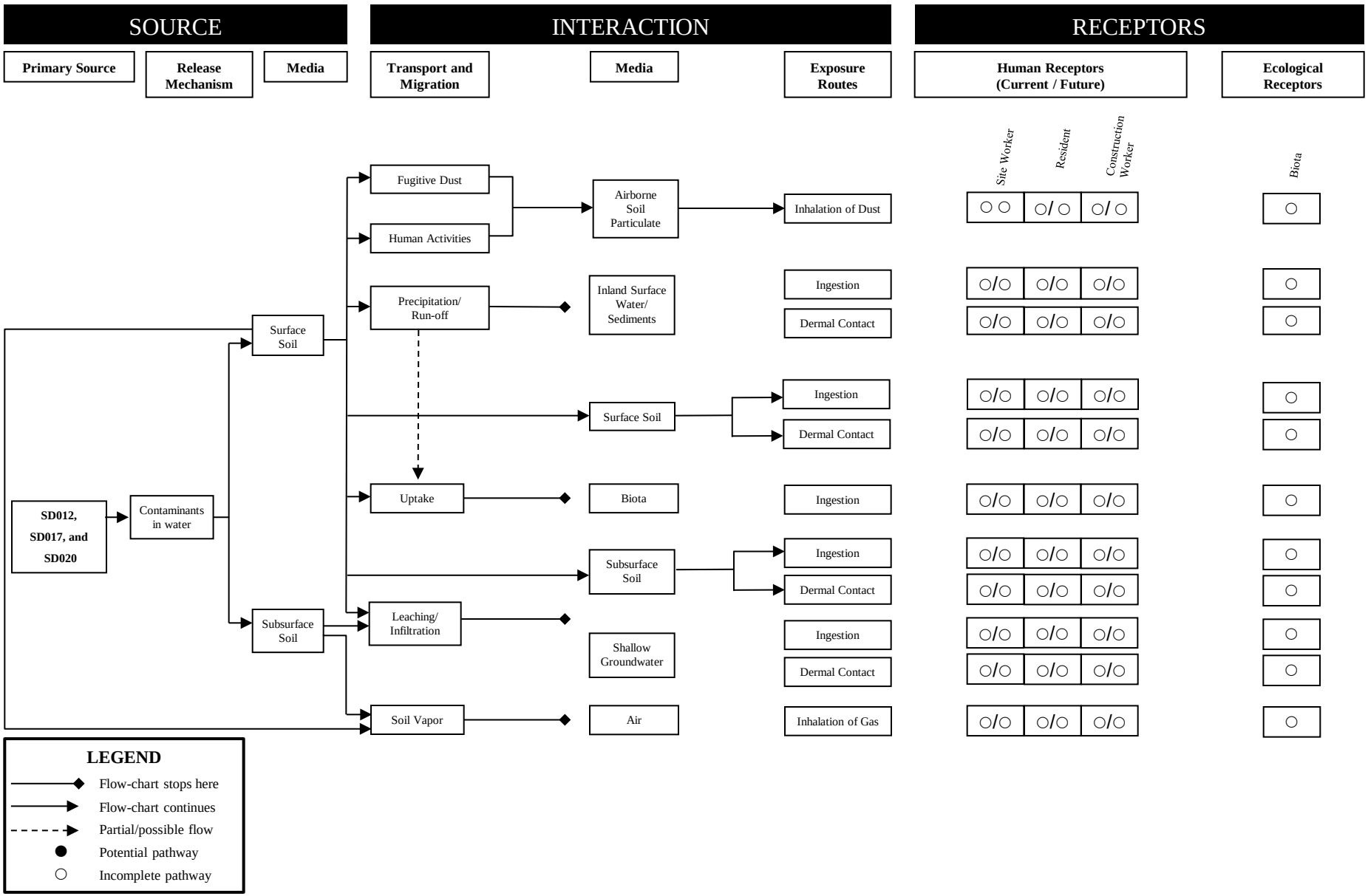
FIGURE 5-4
SITE CONCEPTUAL EXPOSURE MODEL FOR SD012, SD017, and SD020



6.1 SUMMARY

6.1.1 Background Study

A background study was completed in 1997 to determine the naturally occurring concentrations of metals and pesticides in soils at Cannon AFB (W-C 1997). However, based on the limited aerial extent of sampling for the 1997 background study, the calculated background values for arsenic may not have been representative of the arsenic concentrations naturally occurring in the soils Base-wide at Cannon AFB. In order to provide a more representative background concentration for arsenic, additional soil samples were collected from locations where no known historical use was suspected to have impacted the soils. These locations were determined by reviewing the location of the SWMUs identified in the RCRA permit for Cannon AFB and historical investigations, reviewing aerial photographs, and comparing these locations to the soil sample locations from the 1997 background investigation. Thallium was added to the background study based on the approval with modifications letter received from NMED for the RFI work plan (NMED 2015b). These background locations were sampled in accordance with the approved work plan.

Based on the analytical results from the background soil sampling, the following values were calculated for arsenic and thallium in surface and subsurface soils in accordance with NMED guidance (NMED 2015a):

- Arsenic – 5.16E+00 mg/kg in surface soils and 4.38E+00 mg/kg in subsurface soils.
- Thallium – 2.62E-01 mg/kg in surface soils and 1.72E-01 mg/kg in subsurface soils.

6.1.2 SD012

SD012 is a naturally occurring 9-acre playa lake located in the southwestern part of Cannon AFB. Since 1943, stormwater runoff from the flightline has collected in this lake. Stormwater runoff flows toward the center of the site where it either evaporates or percolates into the soil.

Historical investigations identified arsenic at concentrations above previously established background levels and NMED screening levels for arsenic with a historical maximum concentration of 6.0E+00 mg/kg. Based on the evaluation of site concentrations, the site was recommended for CAC with controls and listed on Table 2 (CAC with controls) of the RCRA permit.

Following the establishment of revised background UTLs, historical concentrations of arsenic at SD012 were evaluated against the background. Due to the exceedance of the background levels, additional soil samples were collected from SD012 in accordance with the approved work plan. The historical and current data were then compared to the background data for arsenic using the two-sample hypothesis test in accordance with NMED guidelines (NMED 2015a). Based on the results of the two-sample hypothesis test, arsenic concentrations in the soil at SD012 are within background levels and are not considered to represent an exceedance of NMED residential SSLs. No further evaluation of arsenic was required.

6.1.3 SD017

SD017 was located behind Building 2160, pesticide storage building, which was abandoned in October 1983 and demolished in September 1984. During the site's use, pesticide and herbicide application equipment was cleaned in a sink located inside Building 2160. The sink drained into a 3-foot-square and 2-foot-deep pit at the rear of the building. The bottom of the pit was reported to be unlined and open to the soil (W-C 1992).

Historical investigations identified arsenic at concentrations above previously established background levels and NMED screening levels for arsenic with a historical maximum concentration of 5.6E+00 mg/kg. Based on the evaluation of site concentrations, the locations of detected concentrations, and potential receptors, the site was recommended for CAC without controls. A response received from NMED on May 14, 2008 indicated that SD017 could not be recommended for CAC without controls due to the presence of arsenic in the soils. Therefore, SD017 was listed on Table 2 (CAC with controls) of the RCRA permit.

Following the establishment of revised background UTLs, historical concentrations of arsenic at SD017 were evaluated against the background. Due to the exceedance of the background levels, additional soil samples were collected from SD017 in accordance with the approved work plan. The historical and current data were then compared to the background data for arsenic using the two-sample hypothesis test in accordance with NMED guidelines (NMED 2015a). Based on the results of the two-sample hypothesis test, arsenic concentrations in the soil at SD017 are within background levels and are not considered to represent an exceedance of NMED residential SSLs. No further evaluation of arsenic was required.

6.1.4 SD020

SD020 is a shallow, open ditch that begins near the end of the northeastern runway, Runway 4/22, and extends to the southeast under an access road before emptying into an open field. The northwest end of the ditch is marked by a concrete culvert and is surrounded by heavy vegetation. The drainage ditch is approximately 40 feet wide and runs for approximately 550 feet until it reaches the field.

Historical investigations identified arsenic at concentrations above previously established background levels and NMED screening levels for arsenic with a historical maximum concentration of 4.6E+00 mg/kg. Based on the evaluation of site concentrations, the site was recommended for CAC with controls and listed on Table 2 (CAC with controls) of the RCRA permit.

Following the establishment of revised background UTLs, historical concentrations of arsenic at SD020 were evaluated against the background. All historical concentrations of arsenic at SD020 were below the current background values for arsenic in surface and subsurface soils. Therefore, no further investigation was required at SD020.

6.2 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions/recommendations are provided based on the evaluation completed in this RFI:

- The background UTLs calculated for arsenic and thallium in surface and subsurface soils should be utilized for all future assessments of soil contamination at Cannon AFB.
- Arsenic was the sole COPC identified at SD012. ProUCL comparison tests indicated site arsenic concentrations did not exceed background concentrations. Therefore, SD012 is recommended for CAC without controls.
- Arsenic was the sole COPC identified at SD017. ProUCL comparison tests indicated site arsenic concentrations did not exceed background concentrations. Therefore, SD017 is recommended for CAC without controls.
- Arsenic was the sole COPC identified at SD020. Historical concentrations are below the current background value for arsenic in surface and subsurface soils. Therefore, SD020 is recommended for CAC without controls.

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NEW MEXICO ENVIRONMENT DEPARTMENT

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RYAN FLYNN
Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 30, 2015

Colonel Douglas W. Gilpin
Commander, 27th Special Operations
Mission Support Group
110 E. Alison Avenue, Suite 1098
Cannon Air Force Base

RE: APPROVAL WITH MODIFICATIONS
RCRA FACILTY INVESTIGATION
AT TWELVE SITES-REVISION 1
CANNON AIR FORCE BASE, NEW MEXICO
NM7572124454
HWB-CAFB-14-007

Dear Colonel Gilpin:

The New Mexico Environment Department (NMED) has received Cannon Air Force Base's (Permittee) *RCRA Facility Investigation at Twelve Sites Work Plan, Revision 1* (WP), dated July 21, 2015 and received August 18, 2015. NMED has completed review and hereby approves the WP with the following modifications.

Comments:

1. **Section 2, Project/Task Organization, Page 2-1**

   NMED Comment: Based on recent personnel changes, update all pertinent site contacts, lines of authority and key personnel information in future submittals.

2. **Section 3.3, Critical Data, Page 3-5**

   Permittee's Statement: "Following USEPA guidelines (USEPA 2001, 2004), critical data must be from environmental media representing each major exposure pathway and must be 100-percent complete."

   NMED Comment: Sample preservation and holding times must be met for all submitted samples. Any critical analytical data submitted in support of an assessment may be rejected, if the Permittee does not meet project sample quality control objectives. Upon review of all submitted data, NMED will determine if qualified data is critical in nature. Any submitted data which is not defensible will be rejected, and the Permittee will be directed to resample.

3. **Section 3.6, Human Health Risk Assessment, Page 3-6**

   Permittee's Statement: "Potential human health impacts will be evaluated by comparing maximum chemical concentrations (above background) found at the site with NMED human health SSLs for residential exposure (NMED 2012). In addition, total petroleum hydrocarbons (TPH) data will be compared to NMED TPH screening guidelines for Potable Groundwater (GW-1) (found in Table 6-2 of the NMED risk assessment guidance) (NMED 2012)."

   NMED Comment: Soils analytical data for samples collected during the implementation of the RCRA Facility Investigation (RFI) must be screened utilizing the "NMED Risk Assessment Guidance for Site Investigations and Remediation" (RA Guidance) dated July 2015 (as updated). Appropriate soil screening levels (SSLs) for residential, industrial/occupational, and construction worker receptors are listed in Table A-1 of the RA Guidance. Total Petroleum Hydrocarbons (TPH) risk assessment guidance is presented in Section 6.0, TPH, with the appropriate SSLs presented in Table 6-2.

4. **Section 3.6.4, Comparison With Background, Page 3-8**

   Permittee's Statement: "The industrial worker and recreational user are only exposed to surface soils (0-1 feet); therefore, background comparisons for these receptors will be compared with surface background concentrations. As described previously, the residential and construction worker are exposed to soils from 0-10 feet; therefore, background levels for subsurface soils will be used for these receptors."

   NMED Comment: It should be noted that NMED does not have SSLs for recreational land use. Currently SSLs are only available for residential, construction worker, and industrial/occupational exposure.

5. **Section 3.6.7, Vapor Intrusion Risks, Page 3-9**

Permittee's Statement: "Vapor intrusion and inhalation of indoor air have been identified as a potentially complete pathway at TU504. The concentration of each chemical detected in near-slab samples at TU504 will be compared to the target shallow soil gas concentration corresponding to target indoor air concentration, assuming a soil gas to indoor air Attenuation Factor= 0.1 (Table 2b, USPEA 2002c). If the detected concentration of any chemical exceeds the screening value from Table 2b, then potential site risks will be estimated in a streamlined risk assessment using the Johnson and Ettinger Model (JEM)."

NMED Comment: The vapor intrusion assessment outlined in the RFI must be conducted in accordance with current NMED RA Guidance Section 2.5, Vapor Intrusion Screening Levels (VISLs). The results of the subsurface vapor sampling must be screened against NMED VISLs provided in Table A-3 of the RA Guidance.

6. **Section 3.7 Ecological Risk Assessment, Page 3-10**

NMED Comment: Any further ecological risk assessment implemented in the RFI must be conducted utilizing Volume 2 Screening-Level Ecological Risk of the NMED RA Guidance. Ecological Screening Levels (ESLs) and Toxicity Reference Values (TRVs) have been added to the guidance document. The Permittee must review the RA Guidance and conduct the ecological screening in accordance with any pertinent revisions.

7. **Section 4.2.4, Hospital Abandoned UST Site (TU504), RFA at Eight Sites (URS 2014b), Page 4-3**

NMED Comment: Polynuclear Aromatic Hydrocarbons (PAHs) appear to be in exceedance of the NMED residential SSLs at soil boring location SB-08 at 0-5 feet bgs and 10-15 feet bgs. Because the reported concentration in exceedance of the residential SSL at 0-5 feet bgs falls within the zone of influence for residential and ecological receptors (0-10 feet bgs) the Permittee must carry the identified PAH concentrations forward through the assessment process by evaluating human health and ecological risk.

8. **Section 7.3, Sampling Objectives (DA508), Page 7-3**

Permittee's Statement: "In addition to PAH, arsenic was identified exceeding residential screening levels in the soils at DA508. However, based on the low level arsenic detections (similar to background) and low frequency of other [Chemicals of Potential Concern] COPCs that are related to suspect contamination, the presence of arsenic appeared to be related to high background concentrations and was not indicative of a release. Therefore, no further evaluation of arsenic was warranted. If determined to be necessary, arsenic concentrations at DA508 will be compared to arsenic levels established by the background study that will be completed for Cannon AFB."

NMED Comment: Arsenic has been identified as a COPC that is above the NMED SSLs indicating risk to human health and the environment for the site. If the Permittee cannot demonstrate that reported arsenic concentrations are representative of regional background concentrations, arsenic must be included in the risk evaluation.

9. **Section 8.4, Sampling Locations, Frequencies and Analysis (SD022/SWMU 73), Page 8-3**

   NMED Comment: While the proposed sampling does appear to address the outstanding PAH concentration exceedance at sample location SB-05, additional assessment is required at SD022/SWMU 73. The NMED Approval letter for the RFA Work Plan dated November 16, 2012 specifically states that the proposed scope of work did not address the full potential extent of contamination. Sediments within the storm water ponding area were not sampled for potential COCs. Additional sampling and evaluation is required to determine the extent of contamination. Alternatively, the Permittee may amend the current proposed sampling program to include sampling of ponding area sediments, subsurface soils and surface water. Additional sampling also appears necessary along the perimeter of the ponding area.

   Additionally, as arsenic is in exceedance of residential SSLs at surface soil sample locations SB-01(4.5 mg/kg) and SB-02 (4.5 mg/kg), the Permittee must demonstrate that the concentrations are within the background levels established upon completion of the background study for arsenic proposed in Section 10 of the RFI WP. If it is not demonstrated that arsenic concentrations reflect regional background concentrations, the Permittee must carry arsenic through the risk assessment process.

10. **Section 9.3, Sampling Objectives (TA129), Page 9-3**

    Permittee's Statement: "If determined to be necessary, previously obtained arsenic concentrations at TA129 will be compared to arsenic levels established by the background study that will be completed for Cannon AFB".

    NMED Comment: The residential SSL and currently established background concentration for arsenic have been exceeded at 9 out of 10 boring locations at the 0-5 foot bgs sample interval at TA129 and must be further evaluated. If the proposed background study and statistical analysis are inconclusive, arsenic must be carried through the assessment process.

11. **Section 10, Outstanding Thallium Exceedances, Page 10-2 and 10-10**

    NMED Comment: In addition to arsenic, thallium was detected at concentrations greater than the residential SSL and facility specific background concentration at SWMU 6 (removed tank No. 129) and SWMU 102 (wastewater effluent discharge). Thallium must be carried through the risk assessment process.

12. Appendix A, Analytical Laboratory Information, Reference Limits and Evaluation Tables

NMED Comment: NMED SSLs and VISLs have been updated as of July 2015. The Permittee must ensure all laboratory procedures and detection limits conform to NMED and Environmental Protection Agency (EPA) guidance.

If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 476-6043.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
G. Acevedo, NMED HWB
B. Wear, NMED HWB
N. Dhawan, NMED HWB
B. Chavez, CAFB
R. Lancaster, CAFB
S. Kottkamp, CAFB

File: CAFB 2015, 12 Site Work Plan, Revision 1, Approval with Modifications

NEW MEXICO ENVIRONMENT DEPARTMENT

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RYAN FLYNN
Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

January 25, 2016

Colonel Douglas W. Gilpin
Commander, 27th Special Operations
Mission Support Group
110 E. Alison Avenue, Suite 1098
Cannon Air Force Base

RE: APPROVAL WITH MODIFICATIONS
SUPPLEMENTAL SAMPLING PLAN
WORK PLAN, RCRA FACILTY INVESTIGATION
AT TWELVE SITES-REVISION 1
CANNON AIR FORCE BASE, NEW MEXICO
NM7572124454
HWB-CAFB-14-007

Dear Colonel Gilpin:

In response to comments 9 and 11 of the New Mexico Environment Department's (NMED) December 30, 2015 Approval with Modifications letter for the Cannon Air Force Base (Permittee) July 21, 2015 *Work Plan RCRA Facility Investigation at Twelve Sites-Revision 1*, which required additional sampling, the Permittee submitted a supplemental sampling plan via email for SD022/SWMU 73, SWMU 6, and SWMU 102 on January 14, 2016.

In NMED's November 16, 2012 Approval letter for the Permittee's April 2012 *Final Work Plan-Resource Conservation and Recovery Act Facility Assessment–Solid Waste Management Unit 73*, NMED stated, "[i]t is NMED's opinion that implementation of the IWP [Investigation Work Plan] may produce inconclusive results with respect to characterization of potential nature and extent of site contamination, if any. This opinion is based on the lack of proposed sampling of sediments currently covered by ponded stormwater and by the IWP requirement that boring placement must occur a minimum of 10 feet from standing water."

The emailed supplemental sampling plan addressed the required December 2015 NMED modifications for comment No. 9, pertaining to additional sampling at SD022, and comment No. 11, regarding thallium exceedances at SWMU 6 and SWMU 102. NMED has reviewed the email containing the attached response, proposed supplemental sampling plan, and figure depicting the proposed sampling locations and requires the following modifications:

Modifications for NMED Comment No. 9

Soil boring and sediment samples must be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total analyte list (TAL) metals, polychlorinated biphenyls (PCBs), and total petroleum hydrocarbons (TPH) for gasoline range organics (GRO) and diesel range organics (DRO) for an extended analytical suite (C11-C35).

In order to delineate site conditions at SD022 as required by NMED, the Permittee has proposed completion of four additional soil borings and collection of four sediment samples. In addition to the proposed samples, NMED requires that two additional samples for sediment be collected, one at the north central portion of the pond and one at the southern end of the pond near the mapped stormwater outfall of the pond. Although initially requested, NMED does not require the collection of surface water samples at this time.

Additionally, the soil borings must extend to a depth of at least 10 feet below ground surface or the depth corresponding to the deepest known bottom of the pond. The Permittee must confirm the pond base depth prior to advancement of the soil borings. Should contamination be encountered, the borings must be advanced until full delineation is achieved. Samples must be collected continuously to the termination depth of the proposed borings for surface soils and from two foot intervals thereafter. All soil borings must be located as close as possible to SD022 and must not exceed a distance of 5 feet from the edge of the pond. Sediment samples must be collected at submerged locations. Sampling locations are presented in the attached "NMED proposed soil boring and sediment sampling locations" figure.

Upon submittal of the sampling results, NMED will review the data and determine if additional sampling is required.

Modifications for NMED Comment No. 11

Approval is granted for inclusion of thallium into the background study for arsenic for exceedances identified at SWMU 6 and SWMU 102. However, if concentrations of thallium exceed the new background concentration, NMED will require that thallium also be carried through the risk assessment process.

Amended replacement pages for the *Work Plan RCRA Facility Investigation at Twelve Sites* which have addressed NMED modifications to comment No. 9 and No. 11 must be submitted to NMED no later than **February 29, 2016**.

If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 476-6043.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
G. Acevedo, NMED HWB
B. Wear, NMED HWB
N. Dhawan, NMED HWB
B. Chavez, CAFB
R. Lancaster, CAFB
S. Kottkamp, CAFB

File: CAFB 2016 and Reading, CAFB-14-007

NMED proposed soil boring and sediment sampling locations

1:2,400

0 100 200 400 Feet

B.1 – Background

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB01-000.5 BORING NO. CABAC-SB01

DATE/TIME COLLECTED: 2/1/16 1049 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: direct push 0.0-0.5' J. Hoppmann

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 0.0-0.5' DESCRIPTION: Silty Clay (CL), soft, medium plasticity, brown to light red, some silt, root traces

GENERAL COMMENTS

None

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB01-005 BORING NO. CABAC-SB01

DATE/TIME COLLECTED: 2/1/16 1059 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: direct push 4.5-5.0' J. Hoppmann

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: (YES) NO SPLIT SAMPLE NO. CABAC-SB01-305 @ 1103

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz jar	4°C	Arsenic/Thallium (6020A)
1x 2 oz jar	4°C	↓

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 4.5-5.0' DESCRIPTION: Sand (SP), loose, light red to white, fine grained

GENERAL COMMENTS

Split sample collected at 1103

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB01-010 BORING NO. CABAC-SB01

DATE/TIME COLLECTED: 2/1/16 1118 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: direct push 9.5-10.0' J. Hoppmann

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: (YES) NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
2 x 4 oz jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 9.5'-10.0' DESCRIPTION: Sand (SP), loose, light red to white, fine grained

GENERAL COMMENTS

MS/MSD Collected at 1120 (CABAC-SB01-110)

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB02-000.5 BORING NO. CABAC-SB02

DATE/TIME COLLECTED: 5/3/2016 / 1000 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore 0-0.5 Feet BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring -ND-

Headspace

SAMPLE DESCRIPTION

DEPTH: 0-0.5 DESCRIPTION: Sand SILT (ML) - Soft to medium dense, moist, light Brown to light Red, Low plastic Some Fine grain Sand, Root traces

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB02-005 BORING NO. CABAC-SB02

DATE/TIME COLLECTED: 5/3/2016 / 1005 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macro core 4.5-5.0 Feet BGS J. Carritt

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass, w	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 4.5-5.0 Feet ~~4.5-10.0~~ BGS KK DESCRIPTION: Silty CLAY (CL) - medium stiff, moist, light Brown to light Red, low plastic, Some silt Caliche nodules up to 1/16 inch

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB02-010 BORING NO. CABAC-SB02

DATE/TIME COLLECTED: 5/3/2016 / 1015 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore 9.5-10.0 Feet BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0 Feet BGS DESCRIPTION: Silty CLAY (CL) - medium stiff, moist, Light Brown to light Red, Low plastic, Some Silt, White caliche mottling, Caliche nodules up to 1/8 inch

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB03-000.5 BORING NO. CABAC-SB03

DATE/TIME COLLECTED: 5/3/2016 / 0903 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore 0-1.0 Feet BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. CABAC-SB03-200.5@0905

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(2) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring

Headspace

ND

SAMPLE DESCRIPTION

DEPTH: ~~0-1.0~~ Feet BGS 0-0.5

DESCRIPTION: Silty CLAY (CL) - medium stiff, moist, light Brown to light Red, Low plastic, Some Silt, trace fine grain Sand, Root traces

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB03-005 BORING NO. CABAC-SB03

DATE/TIME COLLECTED: 5/3/2016 / 0912 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore ~~4.5-10.0~~ 4.5-5.0 Feet ~~Bgs~~ KK J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. **NA**

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: ~~4.5-10.0~~ 4.5-5.0 Feet ~~Bgs~~ KK DESCRIPTION: Silty CLAY (CL) - medium stiff, moist, light Red to White, Low plastic, Some Silt and Fine grain Sand, Caliche nodules Up to 1/8 inch

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB03-010 BORING NO. CABAC-SB03

DATE/TIME COLLECTED: 5/3/2016 / 0920 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore 9.5-10.0 Feet BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0 Feet BGS DESCRIPTION: Silty CLAY (CL) - medium stiff, moist, light Red, lowplastic, Increasing Fine grain Sand and CLAY

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB04-000.5 BORING NO. CABAC-SB04

DATE/TIME COLLECTED: 5/3/2016 / 0810 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macro / 0-0.5 Feet BGS J. Carritt

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, Thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring

Headspace

ND

SAMPLE DESCRIPTION

DEPTH: 0-0.5 Feet BGS DESCRIPTION: SILT (ML) - medium stiff, moist to Dry moist to Dry, Light Brown to light Red, Low plastic, trace clay, Fine grain some Sand, Root traces

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB04-005 BORING NO. CABAC-SB04

DATE/TIME COLLECTED: 5/3/2016 / 0815 PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Geoprobe Macrocore 4.5-5.0 Feet BGS

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 4.5-5.0 Feet BGS DESCRIPTION: SILT (ML) - medium stiff, moist to Dry, Brown, Low plastic, Some Fine grain Sand, Increasing Clay

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB04-010 BORING NO. CABAC-SB04

DATE/TIME COLLECTED: 5/3/2016 / 0825 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore 9.5-10.0 Feet BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring

Headspace ND

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0 DESCRIPTION: Caliche, nodules up to 1/8 inch SILT (ml)- medium stiff, moist, to Dry, ~~Light Brown to light Red~~ Brown Low plastic, trace Clay, Some fine grain Sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB05-000.5 BORING NO. CABAC-SB05

DATE/TIME COLLECTED: 5/2/2016 / 1518 PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Geoprobe Macrocore

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic + thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring

Headspace

ND

SAMPLE DESCRIPTION

DEPTH: 0-0.5 Feet BGS DESCRIPTION: SILT (ML) - medium stiff, moist to Dry light Brown to light Red, Low plastic, trace sand and clay, Root traces

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAL-SB05-005 BORING NO. CABAL-SB05

DATE/TIME COLLECTED: 5/2/2016 / 1524 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore 4.0-5.0' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO CABAL-SB05-205@1526

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(2) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 4.0-5.0 Feet BGS DESCRIPTION: SILT (ML) - medium stiff, moist to Dry, dark Brown to Red, Low plasc, Increasing fine grain Sand + Silt

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB05-010 BORING NO. CABAC-SB05

DATE/TIME COLLECTED: 5/2/2016 / 1536 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore 9.5-10.0 Feet BGS J. Carritt

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4Oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0 Feet BGS DESCRIPTION: SILT (ML) - medium stiff, moist to Dry, light Red to White, Low plastic, caliche nodules up to 1/8 inch

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB06-000.5 BORING NO. CABAC-SB06

DATE/TIME COLLECTED: 2/2/16 1241 PERSONNEL: K. Kloewer, J. Hoppmann

SAMPLE METHOD / DEPTH: geoprobe direct push, 0.0-0.5'

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz. glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 0.0-0.5' DESCRIPTION: Silty clay (CL), soft, moist, brown, low plastic, some silt, root traces

GENERAL COMMENTS

NONE

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB06-005 BORING NO. CABAC-SB06

DATE/TIME COLLECTED: 2/2/16 1244 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, ~~1244~~ 4.5-5.0' J. Hoppmann

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz. glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 4.5-5.0' DESCRIPTION: Sand (SP) - loose, moist, brown to light red, fine grained, trace clay

GENERAL COMMENTS

NONE

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB06-010 BORING NO. CABAC-SB06

DATE/TIME COLLECTED: 2/2/16 1251 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, 9.5-10.0' J. Hoppmann

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz. glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0' DESCRIPTION: Sand (SP), loose, moist, light red, fine grained, trace clay

GENERAL COMMENTS

NONE

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: Cannon AFB PBR

PROJECT NO. 23446540

SAMPLE NO. CABAC-SB07-000.5

BORING NO. CABAC-SB07

DATE/TIME COLLECTED: 2/2/16 1317

PERSONNEL: K. Kloewer, J. Hoppmann

SAMPLE METHOD / DEPTH: geoprobe direct push, 0.0-0.5'

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 0.0-0.5'

DESCRIPTION: Silty Clay (CL), loose, moist, brown low plastic, some silt, root traces

GENERAL COMMENTS

None

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB07-003.5 BORING NO. CABAC-SB07

DATE/TIME COLLECTED: 2/2/16 1321 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, 8" 3.0-3.5' J. Hoppmann

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO.

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO.

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 3.0-3.5' DESCRIPTION: Silty Clay (CL), loose, moist, brown, low plastic, decreasing silt, increasing clay and sand

GENERAL COMMENTS

None

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB07-010 BORING NO. CABAC-SB07

DATE/TIME COLLECTED: 2/2/16 ~~1334~~ 1335 vH PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, 9.5-10.0' J. Hoppmann

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: (YES) NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
2x 4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0' DESCRIPTION: Sandy Clay (CL), loose, moist, reddish brown, medium plasticity, some sand

GENERAL COMMENTS

MS/MSD CABAC-SB07-110

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: Cannon AFB PBR

PROJECT NO. 23446540

SAMPLE NO. CABAC-SB08-000.5

BORING NO. CABAC-SB08

DATE/TIME COLLECTED: 2/2/16 1423

PERSONNEL: K. Kloewer, J. Hoppmann

SAMPLE METHOD / DEPTH: geoprobe direct push, 0.0-0.5'

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 0.0-0.5' DESCRIPTION: Silty Clay (CL), moist, reddish brown, low plasticity, root traces

GENERAL COMMENTS

None

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB08-005 BORING NO. CABAC-SB08

DATE/TIME COLLECTED: 2/2/16 1426 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, 4.5-5.0' J. Hoppmann

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz. glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: ~~4.0'~~ 4.5-5.0' DESCRIPTION: Silty Clay (CL), dry, light beige, low platisity, ~~some~~ trace sand

GENERAL COMMENTS

None

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB08-010 BORING NO. CABAC-SB08

DATE/TIME COLLECTED: 2/2/16 1438 PERSONNEL: K. Kloewer, J. Hoppmann

SAMPLE METHOD / DEPTH: geoprobe direct push, 9.5-10.0'

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz. glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0' DESCRIPTION: Sandy Clay (CL), dry, light brown, low plasticity, fine grained sand (10%)

GENERAL COMMENTS

None

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB09-000.5 BORING NO. CABAC-SB09

DATE/TIME COLLECTED: 5/2/2016 / 1305 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore J. Carritt

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: (YES) NO DUPLICATE SAMPLE NO. CABAC-SB09-200.5 @ 1315

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
2x (1) 8oz glass jar KK	4°C	Arsenic thallium (6020A)

PID MEASUREMENTS

Background

Breathing zone

Boring

Headspace ND

SAMPLE DESCRIPTION

DEPTH: 0-1 Feet BGS DESCRIPTION: Silty CLAY (CL) - Stiff, moist to Dry, Brownish Red, low plastic, some silt, trace Fine grain Sand

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GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB09-005 BORING NO. CABAC-SB09

DATE/TIME COLLECTED: 5/2/2016 / 1325 PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Geoprobe Macrocore

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 4.5-5.0 Feet bgs DESCRIPTION: Silty CLAY (CL) - stiff, moist, light Red, low plastic, some silt, trace Sand, caliche nodules up to 1/8 inch

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB09-010 BORING NO. CABAC-SB09

DATE/TIME COLLECTED: 5/2/2016/1341 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore 9.5-10.0' BGS J. Carritt

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic, thallium 6020A

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0 Feet BGS DESCRIPTION: Silty CLAY (CL) - stiff, Dry to moist, low plastic, light Red to White, Caliche layer.

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB10-000.5 BORING NO. CABAC-SB10

DATE/TIME COLLECTED: 2/2/16 ~~1116~~ JH 1119 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, 0-0.5' J. Hoppmann

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 0-0.5' DESCRIPTION: Silty clay(a), brown, soft moist, low plastic, some silt, root fragments

GENERAL COMMENTS

NONE

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: Cannon AFB PBR

PROJECT NO. 23446540

SAMPLE NO. CABAC-SB10-~~005~~ 004.5 UH

BORING NO. CABAC-SB10

DATE/TIME COLLECTED: 2/2/16 1122

PERSONNEL: K. Kloewer, J. Hoppmann

SAMPLE METHOD / DEPTH: geoprobe direct push, ~~0.5~~ UH 4.0-4.5'

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO)

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO)

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1x 4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 4.0 - 4.5'

DESCRIPTION: Sand (SP), loose, moist, red, fine grain, trace clay

GENERAL COMMENTS

NONE

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CABAC-SB10-010 BORING NO. CABAC-SB10

DATE/TIME COLLECTED: 2/2/16 1133 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe direct push, 9.5-10.0' J. Hoppmann

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
4 oz glass jar	4°C	Arsenic/Thallium (6020A)

PID MEASUREMENTS

Background	0.0 ppm
Breathing zone	0.0 ppm
Boring	0.0 ppm
Headspace	0.0 ppm

SAMPLE DESCRIPTION

DEPTH: 9.5-10.0' DESCRIPTION: Sand (SP), loose, dry, light red to white, fine grain, trace clay

GENERAL COMMENTS

NONE

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.	HOLE NUMBER: CABAC-SB01	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods	8. HOLE LOCATION: Background Arsenic Location	
	9. SURFACE ELEVATION: 4332 Feet Above Mean Sea level	
	10. DATE STARTED: 2/1/2016	11. DATE COMPLETED: 2/1/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

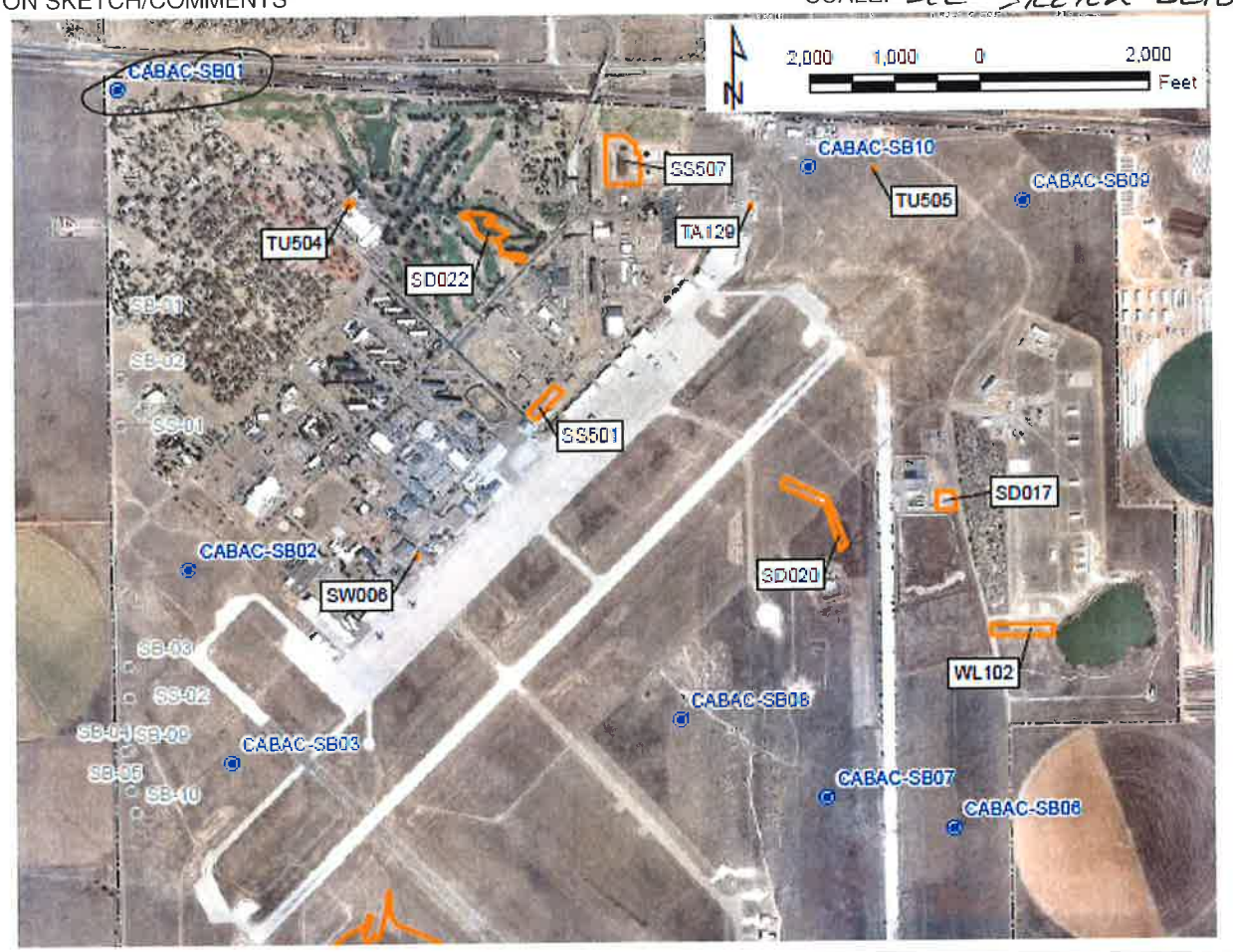
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	—	—	N/A

20. SAMPLES FOR CHEMICAL	Arsenic/Thallium	TPH-ORO	SVOCs	PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X	—	—	—	—	90 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X	—	—	[signature]

LOCATION SKETCH/COMMENTS

SCALE: See Sketch Below



PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB01

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB01

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Grass				PP=Pocket Pen (Tons/FT^2)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		Silty CLAY(CL) - Soft, Mediam plastic, Brown to light Red, Some silt, Root traces	FS=ND HS=ND	N/A	CABAC-SB01-000.5		
	1						R=5 Feet Rec=5 Feet
							Ogallala Formation
	2		FS=ND				
	3						
		SAND(SP) - Loose, light Red to White, fine grain, trace Root traces					
	4		FS=ND				
						KK	
			FS=ND HS=ND		CABAC-SB01-005		
	5						R=5 Foot Rec=4 Foot
	6		FS=ND				
	7	Becoming Whitish, Increasing density					
	8		FS=ND				
	9						
	10	Bottom of Boring @ 10.0 Feet BGS	FS=ND HS=ND			CABAC-SB01-010	

Project: Cannon AFB PBR

HOLE NO. CABAC-SB01

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.~~0021AB YK~~	HOLE NUMBER: CABAC-SB02	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF 3
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4308 Feet Above Mean Sea level	
	10. DATE STARTED: 5-3-2016	11. DATE COMPLETED: 5-3-2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X 6020A	X	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips X	N/A	N/A	[signature]

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below

PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB02

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB02

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	GRASS					BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		Sandy SILT (ML) - Soft to medium dense, moist, light Brown to light Red, Low plastic, Some fine grain Sand, Root traces	FS=ND HS=ND	N/A	CABAC-SB02-000.5	PP=Pocket Pen (Tons/FT²) Time = 1000	R = 5 Feet / 5 Feet Ogallala Formation Macrocore
	1						
	2						
		Silty CLAY (CL) - medium stiff, moist, Light Brown to light Red, low plastic, Some Silt	FS=ND				
	3						
	4						
		Caliche nodules up to 1/16 inch	FS=ND HS=ND		CABAC-SB02-005		Time = 1005
	5						
		White caliche mottling throughout					R = 5 Feet / 5 Feet
	6						
	7		FS=ND				
	8						
	9	Caliche nodules up to 1/8 inch					
	10	Bottom of Boring @ 10.0 Feet BGS	FS=ND HS=ND		CABAC-SB02-010		Time = 1015

Project: Cannon AFB PBR

HOLE NO. CABAC-SB02

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.~~0021AB KK~~	HOLE NUMBER: CABAC-SB03	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF 3 SHEETS
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4292 Feet Above Mean Sea level	
	10. DATE STARTED: 5-3-2016	11. DATE COMPLETED: 5-3-2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet ~~Above Mean Sea level~~ Below ground surface KK	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X 6020A	X	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips X	N/A	N/A	[signature]

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below

PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB03

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB03

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	GRASS		N/A	CABAC-SB03-~~000.5~~ 001	PP=Pocket Pen (Tons/FT^2) KK Time = 0903	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1	Silty CLAY (CL) - Medium Stiff, moist, light Brown to light Red, Low plastic, Some Silt, trace Fine grain Sand, Root traces	FS=ND HS=ND				R = 5 Feet / 5 Feet plus duplicate CABAC-SB03-200.5@0905
	2						Ogallala Formation
		Becoming light Red, Increasing Fine grain Sand	FS=ND				Macrocore
	3						
	4	Becoming light Red to White, Caliche nodules up to 1/8 inch	FS=ND HS=ND		CABAC-SB03-005		Time = 0912
	5	Increasing Clay and hardness					R = 5 Feet / 5 Feet
	6						
	7		FS=ND				
	8	Caliche layer, nodules up to 1/4 inch					
	9						
	10	Bottom of Boring @ 10.0 Feet BGS	FS=ND HS=ND		CABAC-SB03-010		Time = 0920

Project: Cannon AFB PBR

HOLE NO. CABAC-SB03

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0021ABxx	HOLE NUMBER: CABAC-SB04	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF 3 SHEETS
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4272 Feet Above Mean Sea level	
	10. DATE STARTED: 5-3-2016	11. DATE COMPLETED: 5-3-2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X6020A	X	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips X	N/A	N/A	[signature]

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below

PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB04

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB04

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	GRASS					BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		SILT (ml)- medium stiff, moist to Dry, Light Brown to light Red, Low plastic, trace clay, Some Fine grain Sand, Root traces	FS=ND HS=ND	N/A	CABAC-SB04-000.5	PP=Pocket Pen (Tons/FT²) Time= 0810	R = 5 Feet / 5 Feet
	1						Ogallala Formation Macrolore
	2		FS=ND				
	3						
		Becoming Brown, Increasing Clay					
	4						
			FS=ND HS=ND		CABAC-SB04-005		Time = 0815
	5						R = 5 Feet / 5 Feet
	6	Increasing hardness and Clay Content					
	7		FS=ND				
	8						
	9	Caliche lay, nodules up to 1/8 inch					
	10	Bottom of Boring @ 10.0 Feet BGS	HS=ND FS=ND		CABAC-SB04-010		Time = 0825

Project: Cannon AFB PBR

HOLE NO. CABAC-SB04

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.~~0021AB~~	HOLE NUMBER: CABAC-SB05	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF 3
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4268 Feet Above Mean Sea level	
	10. DATE STARTED: 5-2-2016	11. DATE COMPLETED: 5-2-2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X 6020A	X	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite chips X	N/A	N/A	[signature]

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below

PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB05

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB05

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	GRASS		N/A	CABAC-SB05-000.5	PP=Pocket Pen (Tons/FT^2) Time= 1518	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		SILT (ML) - medium stiff, moist to Dry, light Brown to light Red, Low plastic, trace Sand and Clay, Root traces	FS=ND HS=ND				R= 5 Feet / 5 Feet
	1						Ogallala Formation
	2		FS=ND				Microcore
	3	Increasing Fine grain Sand and Clay, Becoming darker					
	4		HS=ND FS=ND		CABAC-SB05-005	Time= 1524	plus duplicate CABAC-SB05-205@1526
	5						R= 5 Feet / 5 Feet
	6	Becoming light Red to White, Caliche nodules up to 1/8 inch	FS=ND				
	7						
	8		FS=ND				
	9						
	10	Bottom of Boring @ 10.0 Feet BGS	FS=ND HS=ND		CABAC-SB05-010		Time=1536

Project: Cannon AFB PBR

HOLE NO. CABAC-SB05

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.	HOLE NUMBER: CABAC-SB06	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4277 Feet Above Mean Sea level	
	10. DATE STARTED: 2/2/2016	11. DATE COMPLETED: 2/2/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

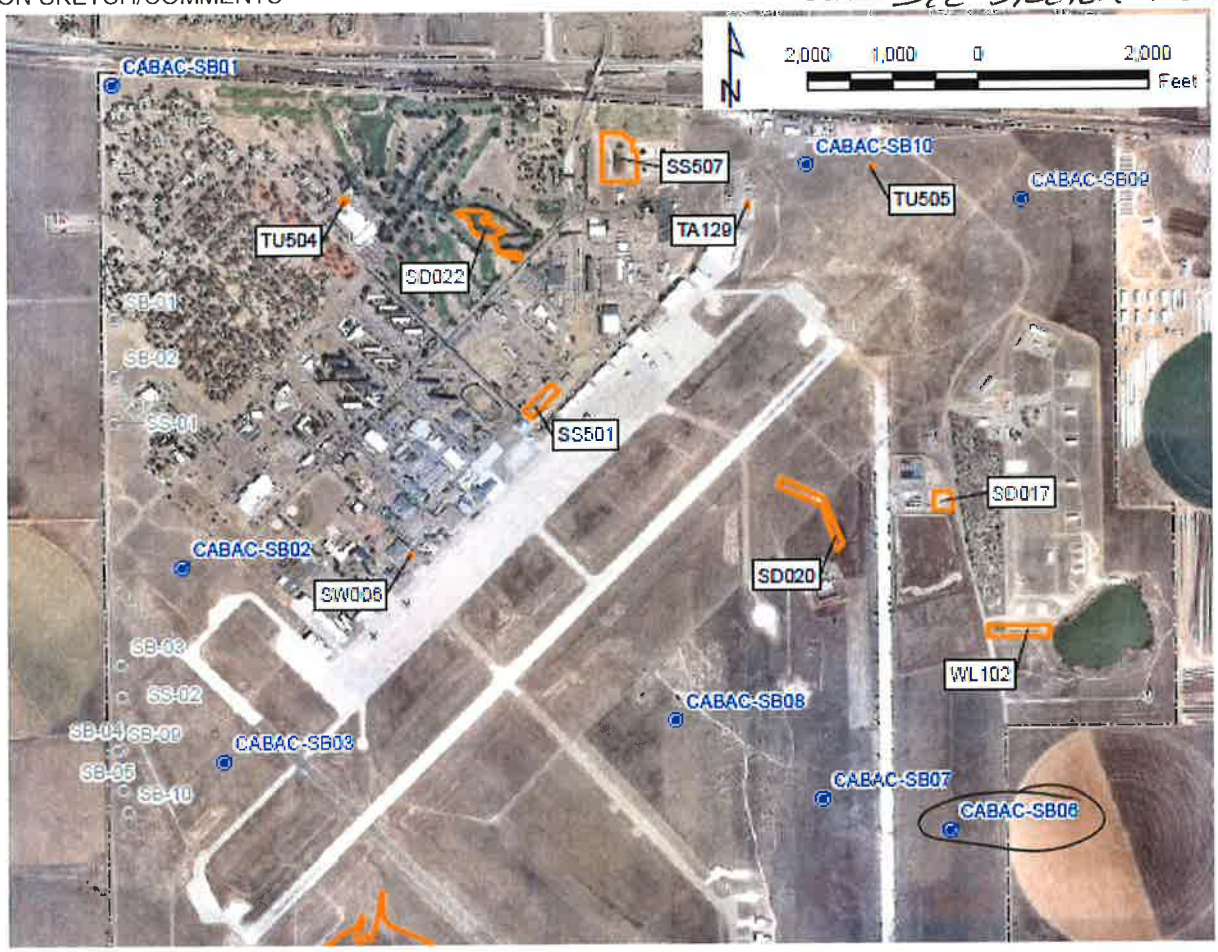
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	—	—	N/A

20. SAMPLES FOR CHEMICAL	Arsenic/Thallium	TPH-ORO	SVOCs	PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X	—	—	—	—	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips	—	—	[signature]

LOCATION SKETCH/COMMENTS

SCALE: See Sketch Below



PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB06

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB06

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Silty CLAY (CL) - soft, moist, Brown, Low plastic, Some Silt, Root traces	FS=ND HS=ND	N/A	CABAC-SB06-000.5	PP=Pocket Pen (Tons/FT^2) PP=0.5	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet) R=5 Feet Rec=5 Feet
	1						
	2		FS=ND				Ogallala Formation
	3	SAND (SP) - loose, moist, Brown, fine grain, trace Clay					
	4	Becoming light Red					
	5		FS=ND HS=ND		CABAC-SB06-005		R=5 Feet Rec=5 Feet
	6	trace caliche nodules	FS=ND				
	7						
	8		FS=ND				
	9						
	10	Bottom of Boring @ 10.0 Feet BGS	HS=ND FS=ND		CABAC-SB06-010		

Project: Cannon AFB PBR

HOLE NO. CABAC-SB06

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.	HOLE NUMBER: CABAC-SB07	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4276 Feet Above Mean Sea level	
	10. DATE STARTED: 2/2/2016	11. DATE COMPLETED: 2/2/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

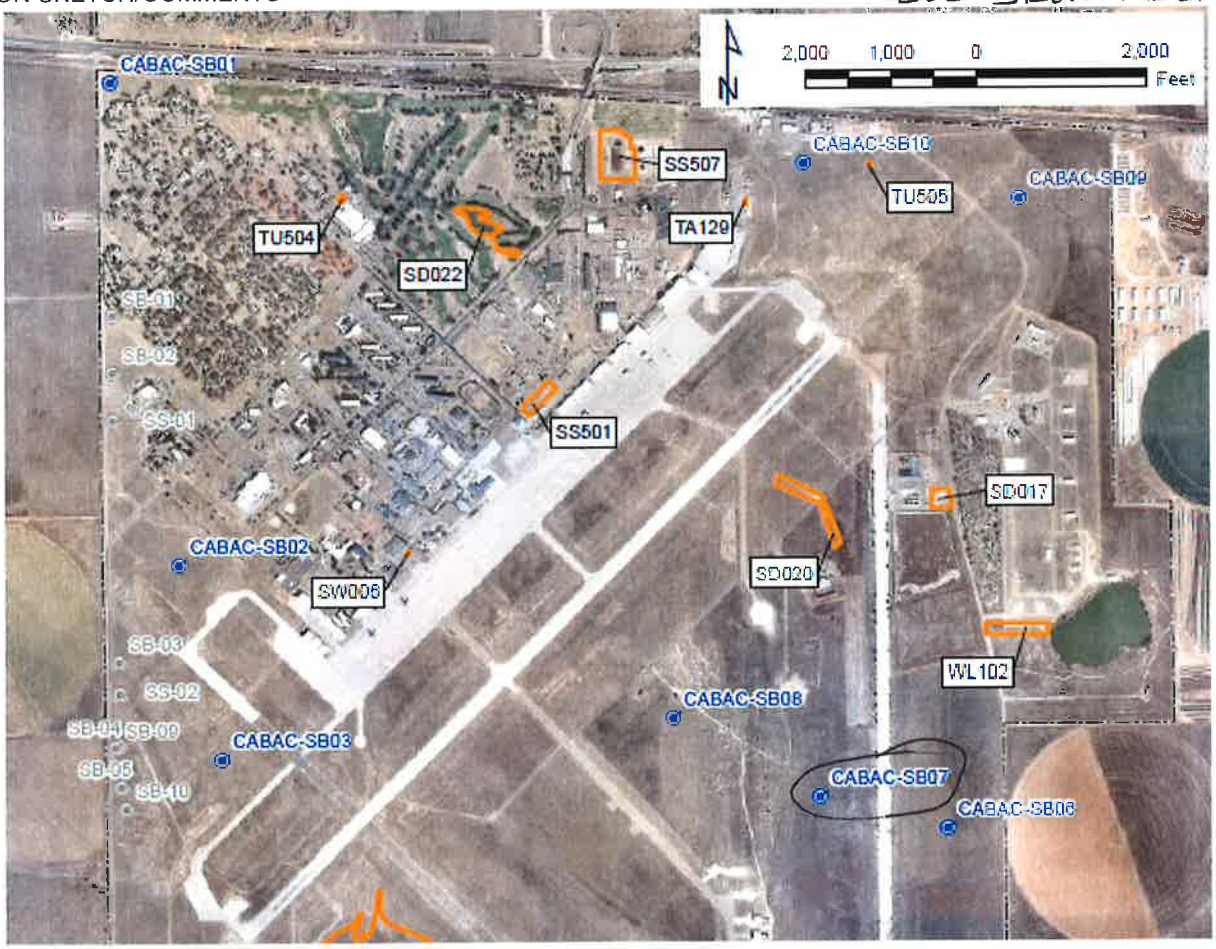
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	—	—	N/A

20. SAMPLES FOR CHEMICAL	Arsenic/Thallium	TPH-ORO	SVOCs	PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X	—	—	—	—	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite chips	—	—	[signature]

LOCATION SKETCH/COMMENTS

SCALE: See Sketch Below



PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB07

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB07

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Silty CLAY (CL) - loose, moist, Brown, Low plastic, Some Silt, root traces.	FS=ND HS=ND	N/A	CABAC-SB07-000.5	PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1					PP= 1.5	R=5 Feet Rec=3.5 Feet
			FS=ND				Ogallala Formation
	2	Decreasing Silt, Increasing clay and Sand					
	3		FS=ND HS=ND		CABAC-SB07-003.5		
	4						
	5	color becoming lighter brown					R=5 Feet Rec=5 Feet
	6		FS=ND				
	7	color change to light beige and increased plasticity					
	8		FS=ND				
	9	Sandy CLAY (CL), loose, moist, reddish brown, medium plasticity, fine sand 15%			CABAC-SB07-010		plus MS/MSD
	10	Bottom of Boring @ 10.0 Feet BGS	HS=ND FS=ND				

Project: Cannon AFB PBR

HOLE NO. CABAC-SB07

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.		HOLE NUMBER: CABAC-SB08
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF 2 SHEETS
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods	8. HOLE LOCATION: Background Arsenic Location	
	9. SURFACE ELEVATION: 4278 Feet Above Mean Sea level	
	10. DATE STARTED: 2/2/2016	11. DATE COMPLETED: 2/2/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

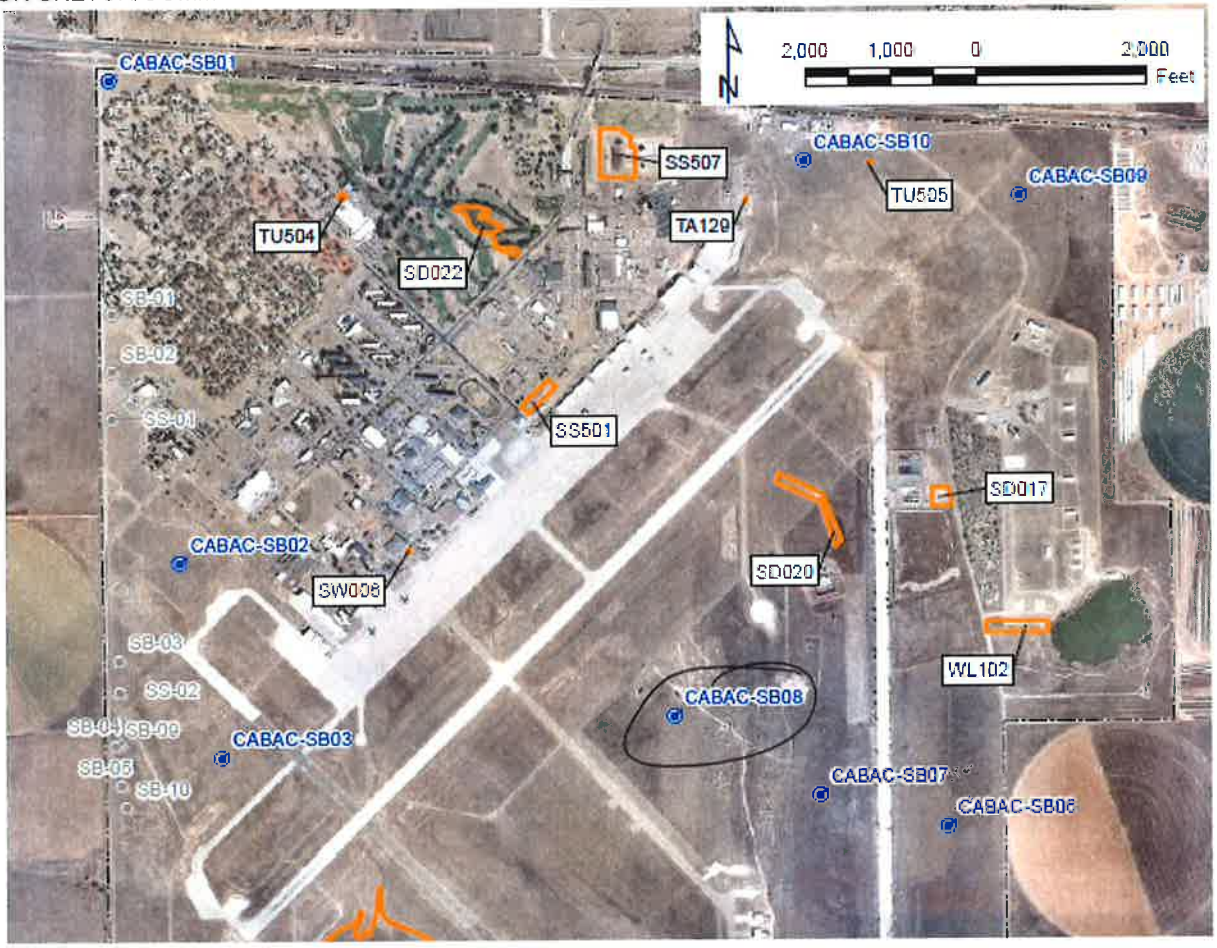
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	—	—	N/A

20. SAMPLES FOR CHEMICAL	Arsenic/Thallium	TPH-ORO	SVOCs	PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X	—	—	—	—	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips	—	—	[signature]

LOCATION SKETCH/COMMENTS

SCALE: See Sketch Below



PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB08

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB08

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty CLAY (CL), moist, reddish brown, low plasticity, root traces		N/A	CABAC-SB08-000.5	PP=Pocket Pen (Tons/FT^2)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1		PID=0.0 ppm				Time = 1420 Run = 5' Recovery = 5'
	2						Headspace: non-detect
		Color change to light beige and caliche to 4.0'					Ogallala Formation
	3						
			PID: 0.0 ppm				
	4	Increasing sand and decreasing moisture					
					CABAC-SB08-005		
	5						
		Sandy Clay (CL), dry, light brown, low plasticity, fine grained sand (10%)					
	6		PID: 0.0 ppm				Time = 1435 Run = 5' Recovery = 5'
	7						
	8						Headspace: non-detect
			PID: 0.0 ppm				
	9						
					CABAC-SB08-010		
	10	Bottom of Boring @ 10.0' bgs					

Project: Cannon AFB PBR

HOLE NO. CABAC-SB08

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.~~0021AB~~ ~~YK~~	HOLE NUMBER: CABAC-SB09	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 3
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4316 Feet Above Mean Sea level	
	10. DATE STARTED: 5-2-2016	11. DATE COMPLETED: 5-2-2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X6020A	X	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips X	N/A	N/A	[signature]

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below

PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB09

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB09

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 3 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	GRASS		N/A		PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		Silty CLAY (CL) - Stiff, Dry to moist, Brownish Red, low plastic, Some silt, trace Fine grain Sand	FS=ND HS=ND		CABAC-SB09-~~000.5~~ KK 001	Time = ~~1536~~ 1305	R=5 Feet Rec=5 Feet plus duplicate CABAC-SB09-200.5 @ 1315
	1						
	2		FS=ND				
		Becoming light Red, caliche nodules up to 1/8 inch					Ogallala Formation MACROCORE
	3						
	4						
			FS=ND HS=ND		CABAC-SB09-005		Time = 1325
	5						R=5 Feet Rec=5 Feet
	6		FS=ND				
	7						
	8	Caliche layer, Becoming light Red to White	FS=ND				
	9						
			FS=ND HS=ND		CABAC-SB09-010	-	Time = 1341
	10	Bottom of Boring @ 10.0 Feet BGS					

Project: Cannon AFB PBR

HOLE NO. CABAC-SB09

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.	HOLE NUMBER: CABAC-SB10	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods	8. HOLE LOCATION: Background Arsenic Locations	
	9. SURFACE ELEVATION: 4328 Feet Above Mean Sea level	
	10. DATE STARTED: 2/2/2016	11. DATE COMPLETED: 2/2/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

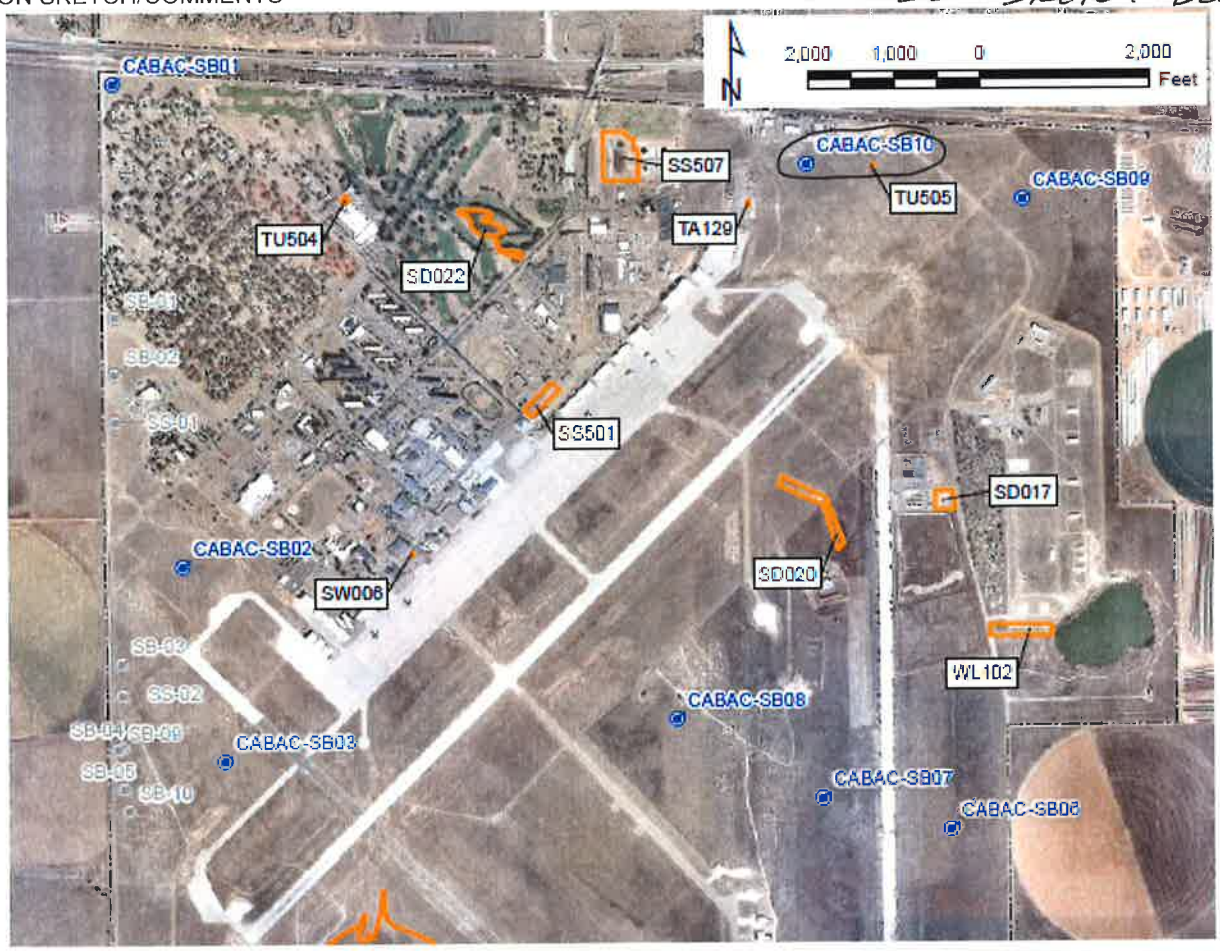
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	—	—	N/A

20. SAMPLES FOR CHEMICAL	Arsenic/Thallium	TPH-ORO	SVOCs	PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X	—	—	—	—	85 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	Bentonite Chips	—	—	[signature]

LOCATION SKETCH/COMMENTS

SCALE: See Sketch Below



PROJECT	HOLE NO.
Cannon AFB PBR	CABAC-SB10

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CABAC-SB10

PROJECT: Cannon AFB PBR

Inspector: Kyle Kloewer

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Grass				PP=Pocket Pen (Tons/FT^2)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		Silty CLAY (CL) - Soft, moist, Brown, Low plastic, Some silt	FS=ND HS=ND	N/A	CABAC-SB10-000.5	PP=0.5	R=5 Feet Rec=4.5 Feet
	1	Root trace					Ogallala Formation
	2		FS=ND				
	3	SAND (SP) - loose, moist, Red, fine grain, trace clay					
	4		FS=ND HS=ND		CABAC-SB10-004.5		
	5						R=5 Feet Rec=4 Feet
	6		FS=ND				
	7						
	8	Caliche nodules up to 1/4 inch Becoming light Red to White, Dry	FS=ND				
	9						
	10	Bottom of Boring @ 10.0 Feet BGS	FS=ND HS=ND		CABAC-SB10-010		

Project: Cannon AFB PBR

HOLE NO. CABAC-SB10

B.2 – SD012

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA012-C85-SS01A-000.5 BORING NO. CA012-C85-SS01A

DATE/TIME COLLECTED: 5/14/16 / 0915 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS DESCRIPTION: Silty Clay (CL) - Soft, moist, DK BRN, low-med plastic, trace fine-med. Sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012-SS02-000.5

BORING NO. CA012-SS02

DATE/TIME COLLECTED: 5/14/16 / 0910

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy Silt (ML) - Soft, moist, BRN, low plastic, little fine sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012 - SS03 - 000.5

BORING NO. CA012 - SS03

DATE/TIME COLLECTED: 5/14/16 / 0920

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO)

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: (YES) NO

DUPLICATE SAMPLE NO. CA012-SS03-200.5 @ 0922

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background

Breathing zone

Boring

Headspace

ND

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy Silt (ML) - Soft, dry, BRN, low plastic, some fine-med Sand, trace gravel

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012-SS04-000.5

BORING NO. CA012-SS04

DATE/TIME COLLECTED: 5/14/16 / 0925

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: SOIL ✓ SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES ~~NO~~ ✓

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES ~~NO~~ ✓

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES ~~NO~~ ✓

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	\
Breathing zone	ND
Boring	\
Headspace	\

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy SILT (ML) Soft, dry, BRN, low plastic, some fine-med. sand, trace gravel

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012-SS05-000.5

BORING NO. ~~CA10~~ CA012-SS05

DATE/TIME COLLECTED: 5/14/16 / 0930

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: SOIL ✓ SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES ✓ NO

SPLIT SAMPLE NO. **NA**

SAMPLE QC DUPLICATE: YES ✓ NO

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES ✓ NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(2) ~~(1)~~ JC 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	ND
Boring	
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy Silt (ML) Soft, dry, BRN, low plastic, little fine-med sand, some gravel

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA012-SS06-000.5 BORING NO. CA012-SS06

DATE/TIME COLLECTED: 5/14/16 / 0938 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background

Breathing zone

Boring ND

Headspace

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS DESCRIPTION: Silty CLAY (CL) (SC) Soft, moist, DK BRN, low-med plastic, some fine sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012 - SS07 - 000.5

BORING NO. CA012-SS07

DATE/TIME COLLECTED: 5/14/16 / 0940

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: SOIL (circled) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (circled) NO

DUPLICATE SAMPLE NO. CA012-SS07-200.5 @ 0942

MS/MSD REQUESTED: YES NO (circled)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	ND
Boring	
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy Silt (ML) Soft, dry, BRN, low plastic, little fine-coarse sand, trace gravel

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA012-SS08-000.5 BORING NO. CA012-SS08

DATE/TIME COLLECTED: 5/14/16 / 0945 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	ND
Boring	
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS DESCRIPTION: Sandy Silt (ML) Soft, dry, BRN, low plastic, little fine-coarse sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012 - SS09 - 000.5

BORING NO. CA012 - SS09

DATE/TIME COLLECTED: 5/14/16 / 0950

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO

SAMPLE QC DUPLICATE: YES NO

MS/MSD REQUESTED: YES NO

SPLIT SAMPLE NO. NA

DUPLICATE SAMPLE NO. NA

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	ND
Boring	
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Silty ~~Sa~~ Sr Clay (~~TL~~ CL) (50) Soft, moist, DK BRN, low plastic, some fine sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012-SS10-000.5

BORING NO. CA012-SS10

DATE/TIME COLLECTED: 5/14/16 / 0955

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5' BGS

SAMPLE MEDIA: SOIL (circled) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO (circled)

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO (circled)

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO (circled)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy Silt (ML) Soft, dry, BRN, low plastic, little fine-med sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR**

PROJECT NO. **23446540**

SAMPLE NO. CA012 - SS11 - 000.5

BORING NO. CA012-SS11

DATE/TIME COLLECTED: 5/14/16 / 1000

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Shovel / 0-0.5'

SAMPLE MEDIA: SOIL (✓) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO (✓)

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO (✓)

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO (✓)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	
Breathing zone	ND
Boring	
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS

DESCRIPTION: Sandy Silt (ML) - Soft, moist, BRN, low plastic, little fine-med sand

GENERAL COMMENTS

NA

B.3 – SD017

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB01-001 BORING NO. CA017-SB01

DATE/TIME COLLECTED: 5/8/16 / 0805 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe macrocore / 0-1' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. CA017-SB01-20 @ 0815

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(2) 4 oz. glass jars	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-1' BGS DESCRIPTION: Sandy Silt (ML) Soft, Dry, light BRN, low plastic, some fine-med sand, Caliche nodules up to 1/4"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB01 - 005 BORING NO. CA017 - SB01

DATE/TIME COLLECTED: 5/8/16 / 0812 PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: geoprobe macrocore / 4.5-6' BGS

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic 6020A

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 4.5-6' BGS

DESCRIPTION: Silt (ML) - Soft, moist, tan, low plastic, trace fine sand, abundant caliche nodules up to 1/4"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB01 - 010 BORING NO. CA017 - SB01

DATE/TIME COLLECTED: 5/8/16 / 0825 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macro core / 9.5-10' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES ~~NO~~ SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES ~~NO~~ DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES ~~NO~~

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 9.5-10' BGS DESCRIPTION: Silty Clay (CL) SC Soft, moist, light tan, low plastic, ~~5-15~~ trace fine sand, Caliche mixing

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB02 - 000.5 BORING NO. CA017 - SB02

DATE/TIME COLLECTED: 5/8/16 / 0840 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe Macro core / 0-0.5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. **NA**

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4° C	Arsenic 6020A

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS DESCRIPTION: Sandy SiH (ML) - Soft to Med stiff BRN, low plastic, little fine sand, Caliche nodules up to 1/16"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB02-005 BORING NO. CA017-SB02

DATE/TIME COLLECTED: 5/8/16 / 0850 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe MacroCore / 4.5-5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1 4 oz glass Jar	4°C	Arsenic 6020A

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 4.5-5' BGS DESCRIPTION: Caliche - Pulverized caliche (pulvocalcic horizon)

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB02-010 BORING NO. CA017-SB02

DATE/TIME COLLECTED: 5/8/16 / 0900 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geo Probe, macrocore / 9.5-10' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1 4 oz glass jar	4°C	Arsenic 6020A

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 9.5-10' BGS

DESCRIPTION: Silty Clay (~~Ant~~ CL) SC Stiff to very stiff, moist to dry, reddish-BRN, low plastic, trace fine sand, Caliche mottles

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB03-001 BORING NO. CA017-SB03

DATE/TIME COLLECTED: 5/8/16 / 0925 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe macro core / 0.5-1' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. CA017-SB03-201 @ 0935

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(2) 4 oz glass jar	4° C	Arsenic 6020A

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 0.5-1' BGS

DESCRIPTION: Sandy Silt (ML) - Stiff to v. Stiff, dry to moist, light BRN, low plasticity, some fine-med sand, some Calcium ~~Abbt~~ Sc nodules up to 1/16"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB03-0041.5 BORING NO. CA017-SB03

DATE/TIME COLLECTED: 5/8/16 / 0934 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: ~~4.5~~ 4.0-4.5' KK 1365

DESCRIPTION: Caliche Horizon - Pulverized petrocalcic horizon

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB03 - 010 BORING NO. CA017 - SB03

DATE/TIME COLLECTED: 5/8/16 / 0945 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macro core / 9.5-10' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 9.5-10' BGS DESCRIPTION: Silty Clay (~~Alt~~ CL) - Soft to Stiff, Dry, BRN, low plastic, little fine - med Sand

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB04 - 002 BORING NO. CA017 - SB04

DATE/TIME COLLECTED: 5/8/16 / 1002 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore / 1.5-2' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(2) 4 oz glass jars	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 1-2' BGS DESCRIPTION: Sandy Silt (ML) - Mod Stiff to Stiff moist - dry, low plastic, 16-30%. fine to med. sand, some Caliche nodules up to 1/16"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB04-005 BORING NO. CA017-SB04

DATE/TIME COLLECTED: 5/8/16 / 1010 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe macro core / 4.5-5' BGS J. Carritt

SAMPLE MEDIA: (SOIL) SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES (NO) SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES (NO) DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES (NO)

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4° C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 4.5-5' BGS DESCRIPTION: Sandy Silt (ML) - med stiff to stiff, moist - dry, low plastic, 31-49 % fine to medium sand, some caliche nodules up to 1/16"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB04 - 010 BORING NO. CA017 - SB04

DATE/TIME COLLECTED: 5/8/16 / 1027 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: geoprobe macrocore / 9.5-10' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 9.5-10' BGS DESCRIPTION: Sandy Silt (ML) - Soft to v. soft, dry, light BRN, low plastic, fine to med. sand (3)-49%) with embedded charcoal fragments up to 1/16"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB05-001 BORING NO. CA017-SB05

DATE/TIME COLLECTED: 5/8/16 / 1045 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macro Core / 0.5-1' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
4oz (1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	

SAMPLE DESCRIPTION

DEPTH: 0.5-1' BGS DESCRIPTION: Sandy Silt (ML) - Med Stiff to Stiff, dry, BRN, low plastic, Some fine-med Sand, Some Caliche nodules up to 1/16"

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017-SB05-005 BORING NO. CA017-SB05

DATE/TIME COLLECTED: 5/8/16 / 1051 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore / 4.5-5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES ~~NO~~ ✓ SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES ~~NO~~ ✓ DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES ~~NO~~ ✓

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 4.5-5' BGS DESCRIPTION: Sandy Silt (ML) Soft, dry, reddish-BRN, low plastic, some fine-med. sand, embedded charcoal

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB05 - 010 BORING NO. CA017 - SB05

DATE/TIME COLLECTED: 5/8/16 / 1100 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macrocore / 9.5-10' BGS J. Carritt

SAMPLE MEDIA: SOIL ✓ SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES ~~NO~~ ✓ SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES ~~NO~~ ✓ DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES ~~NO~~ ✓

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 9.5-10' BGS

DESCRIPTION: Sandy Silt (ML) Stiff, dry, DK BRN to BLK, low plastic with 5-15% Coarse Sand, + gravel

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB06 - 000.5 BORING NO. CA017 - SB06

DATE/TIME COLLECTED: 5/8/16 / 1115 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe Macro core / 0-0.5' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 0-0.5' BGS DESCRIPTION: Gravel with Caliche nodules

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: Cannon AFB PBR

PROJECT NO. 23446540

SAMPLE NO. CA017-SB06-005

BORING NO. CA017-SB06

DATE/TIME COLLECTED: 5/8/16 / 1121

PERSONNEL: K. Kloewer, J. Carritt

SAMPLE METHOD / DEPTH: Geoprobe Macro Core / 0-0.5' BGS

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES NO

SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES NO

DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 4.5-5' BGS

DESCRIPTION: Caliche Horizon - Pulverized petrocalcic horizon

GENERAL COMMENTS

NA

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: **Cannon AFB PBR** PROJECT NO. **23446540**

SAMPLE NO. CA017 - SB06 - 010 BORING NO. CA017 - SB06

DATE/TIME COLLECTED: 5/8/16 / 1128 PERSONNEL: K. Kloewer

SAMPLE METHOD / DEPTH: Geoprobe macrocore / 9.5-10' BGS J. Carritt

SAMPLE MEDIA: SOIL SEDIMENT SOIL GAS

SAMPLE QA SPLIT: YES ~~NO~~ SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES ~~NO~~ DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES ~~NO~~

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
(1) 4 oz glass jar	4°C	Arsenic (6020A)

PID MEASUREMENTS

Background	ND
Breathing zone	ND
Boring	ND
Headspace	—

SAMPLE DESCRIPTION

DEPTH: 9.5-10' BGS DESCRIPTION: Silty Clay (~~ML~~ CL) - Med. Stiff to Stiff, dry, light BRN, low plasticity, 5-15% fine sand, calcite mottling

GENERAL COMMENTS

NA

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0012AA	HOLE NUMBER: CA017-SB01	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR-SD017	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Site SD017	
	9. SURFACE ELEVATION: 4286 Feet Above Mean Sea Level	
	10. DATE STARTED: 05/08/2016	11. DATE COMPLETED: 05/08/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

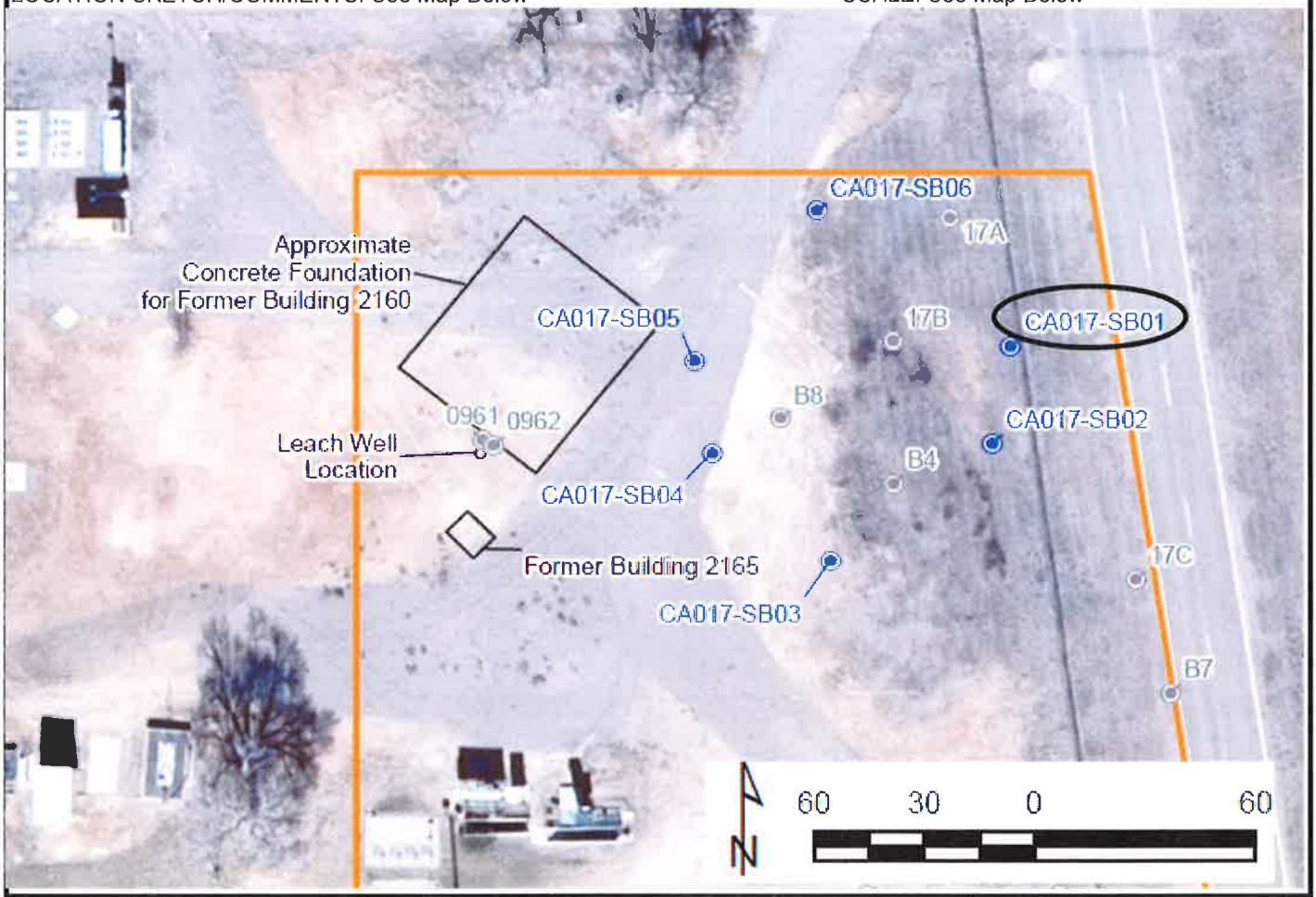
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X (6020A)	–	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X Bentonite chips	N/A	NA	

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below



PROJECT	HOLE NO.
Cannon AFB PBR	CA017-SB01

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CA017-SB01

PROJECT: Cannon AFB PBR

Inspector: ~~Kyle Kloewer~~ Jeff Carvitt

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Grass with some gravel		N/A	CA017-SB01-001 Plus CA017-SB01-201	PP=Pocket Pen (Tons/FT²) @0805 @0815	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1	Sandy Silt (ML) - Soft, Dry light BRN, low plastic, some fine - Med. Sand, caliche nodules up to 1/4"	FS=ND				R=5'/5'
	2						Ogallala Formation
	3		FS=ND				
	4	Becoming Reddish-BRN, increasing moisture					
	5	Silt (ML) - Soft, moist, tan, low plastic, trace fine sand, abundant Caliche nodules up to 1/4"	FS=ND		Analytical here ⇐	CA017-SB01-005 @0812	R=5'/5'
	6	CL su Silty Clay (~~ML~~) - Soft, moist, light brownish red to tan, low plastic, 5-15% fine sand Caliche mottling	FS=ND				
	7		FS=ND				
	8						
	9	Becoming light tan trace sand					
	10	Bottom of Boring @ 10' BGS	FS=ND		CA017-SB01-0180 @0825		

Project: Cannon AFB PBR

HOLE NO. CA017-SB01

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0012AA	HOLE NUMBER: CA017-SB02	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR-SD017	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods; 25 (PC)	8. HOLE LOCATION: Site SD017	
	9. SURFACE ELEVATION: 4286 Feet Above Mean Sea Level	
	10. DATE STARTED: 05/08/2016	11. DATE COMPLETED: 05/08/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

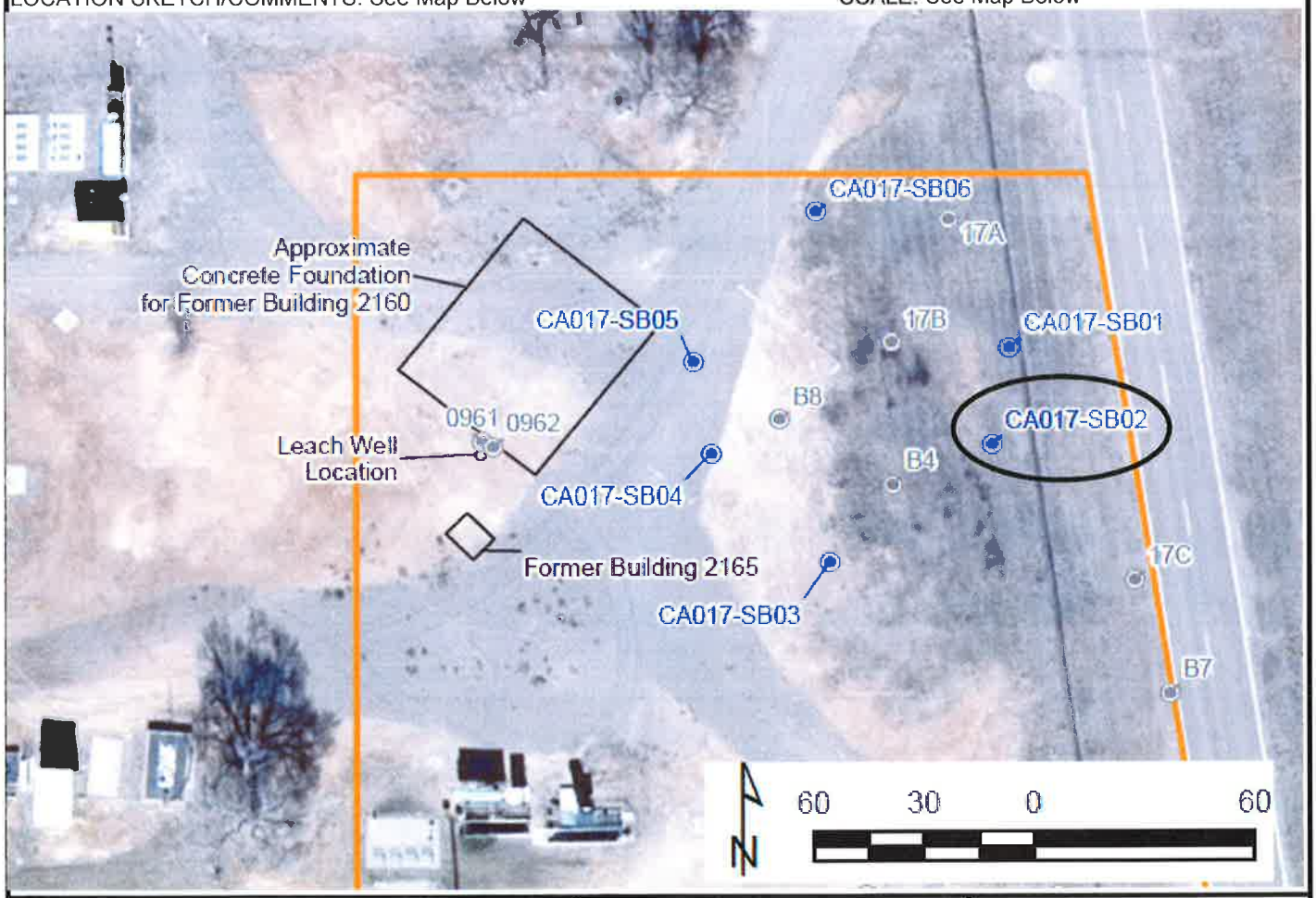
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	—	—	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X (6020A)	—	—	—	—	95 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X Bentonite Chips	N/A	NA	[signature]

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below



PROJECT	HOLE NO.
Cannon AFB PBR	CA017-SB02

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CA017-SB02

PROJECT: Cannon AFB PBR

Inspector: ~~Kyle Kloewer~~ Jeff Carrita

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	GRASS + Large gravel		N/A	CA017-SB02-0005 @ 0840	PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1	Sandy Silt (ML) - Soft to Med Stiff BRN, low plastic, little fine Sand (16-30%), some Caliche nodules up to 1/16"	FS=ND				R = 5'/5'
	2		FS=ND				Ogallala Formation
	3	Increasing Sand					
	4	Becoming Reddish-BRN, Soft - Same as above					
		Caliche - pulverized petro-calcic horizon	FS=ND		CA017-SB02-005 @ 0850		
	5						R = 4.5'/5'
		Silt (ML) Soft, dry, tan, low-Med plastic,					
	6	Silty Clay (CL) Stiff to very Stiff, Moist to dry, reddish-BRN, low plastic, trace fine sand, Caliche mottles	FS=ND				
	7						
	8		FS=ND				
	9						
	10	Bottom of Boring at 10' BGS	FS=ND		CA017-SB02-010	SC X @ 0900	

Project: Cannon AFB PBR

HOLE NO. CA017-SB02

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0012AA	HOLE NUMBER: CA017-SB03	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR-SD017	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.~~5~~ 25 inch OD Rods	8. HOLE LOCATION: Site SD017	
	9. SURFACE ELEVATION: 4286 Feet Above Mean Sea Level	
	10. DATE STARTED: 05/08/2016	11. DATE COMPLETED: 05/08/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

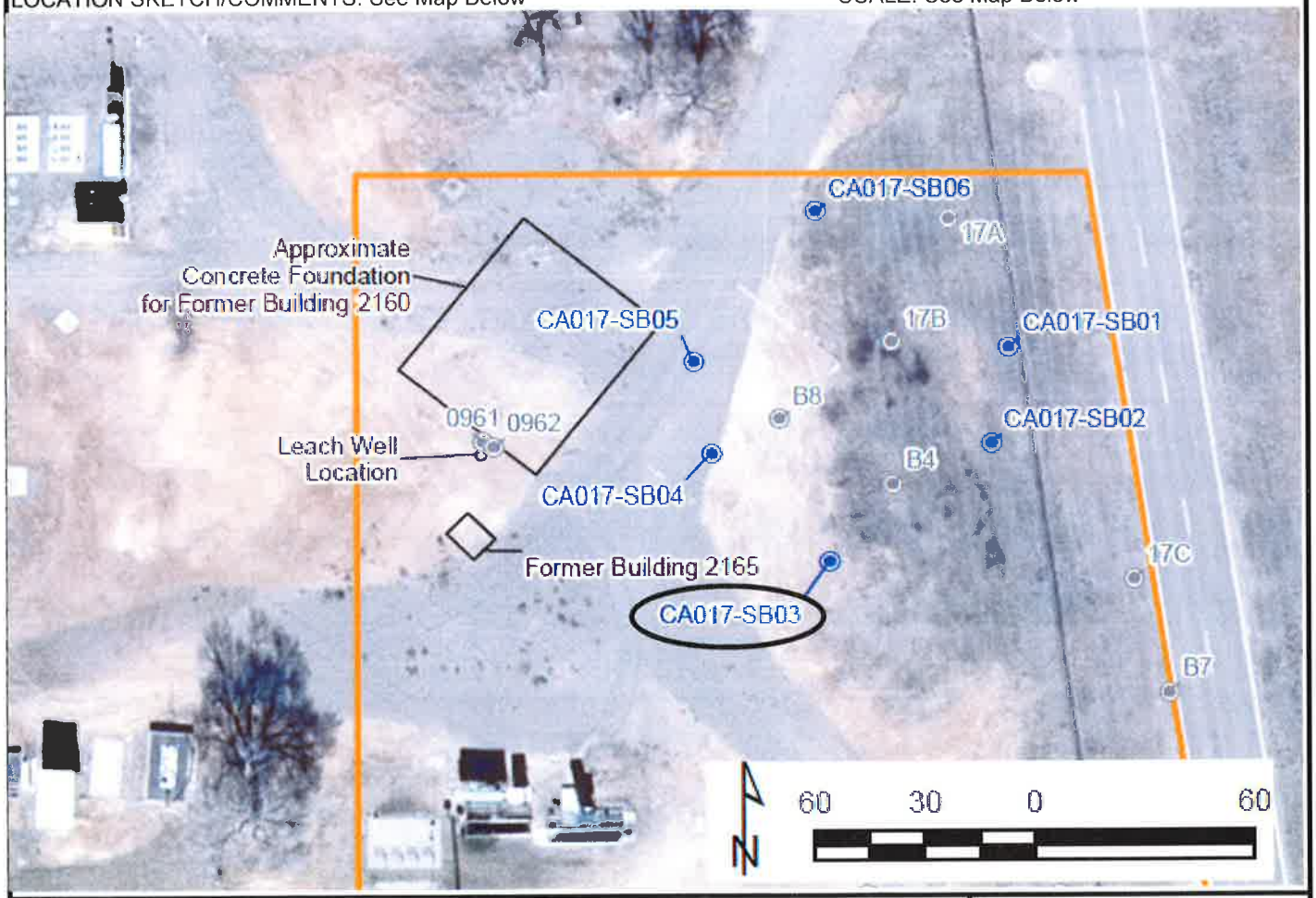
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X (6020A)	–	–	–	–	85 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X Bentonite Chips	N/A	NA	

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below



PROJECT	HOLE NO.
Cannon AFB PBR	CA017-SB03

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CA017-SB03

PROJECT: Cannon AFB PBR

Inspector: ~~Kyle Kloewer~~ Jeff Carrett

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Gravel		N/A	CA017-SB03-000.5 (JC)	PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
		Sandy Silt (ML) - Stiff to V. Stiff, dry to moist, light BRN, low plasticity, Some fine-Med Sand, Some Caliche nodules up to 1/16"			Collected At 001' BGS @ 0925		R = 45'/5'
	1		FS=ND				
	2		FS=ND				Ogallala Formation
	3	Caliche					
		Sandy Silt (ML) - Same As Above					
	4	Caliche - Pulverized petrocalcic horizon X JC	FS=ND		CA017-SB03-004.5 @ 0934		
	5				X JC		
	6	Sandy Silt (ML) Soft, dry, White to light red, low plastic ~50% fine-med. sand, many Caliche nodules up to 1/4"					R = 4'/5'
	7	CL JC					
	8	Silty Clay (~~ML~~) Soft to Stiff, Dry, BRN, low plastic, little 16-30% fine-med sand					
	9	Becoming tan Increasing Silt					
	10	Bottom of Boring at 10'BGS	FS=ND		CA017-SB03-010 @ 0945		

Project: Cannon AFB PBR

HOLE NO. CA017-SB03

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0012AA	HOLE NUMBER: CA017-SB04	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR-SD017	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.5 inch OD Rods; 25 (SC)	8. HOLE LOCATION: Site SD017	
	9. SURFACE ELEVATION: 4287 Feet Above Mean Sea Level	
	10. DATE STARTED: 05/08/2016	11. DATE COMPLETED: 05/08/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

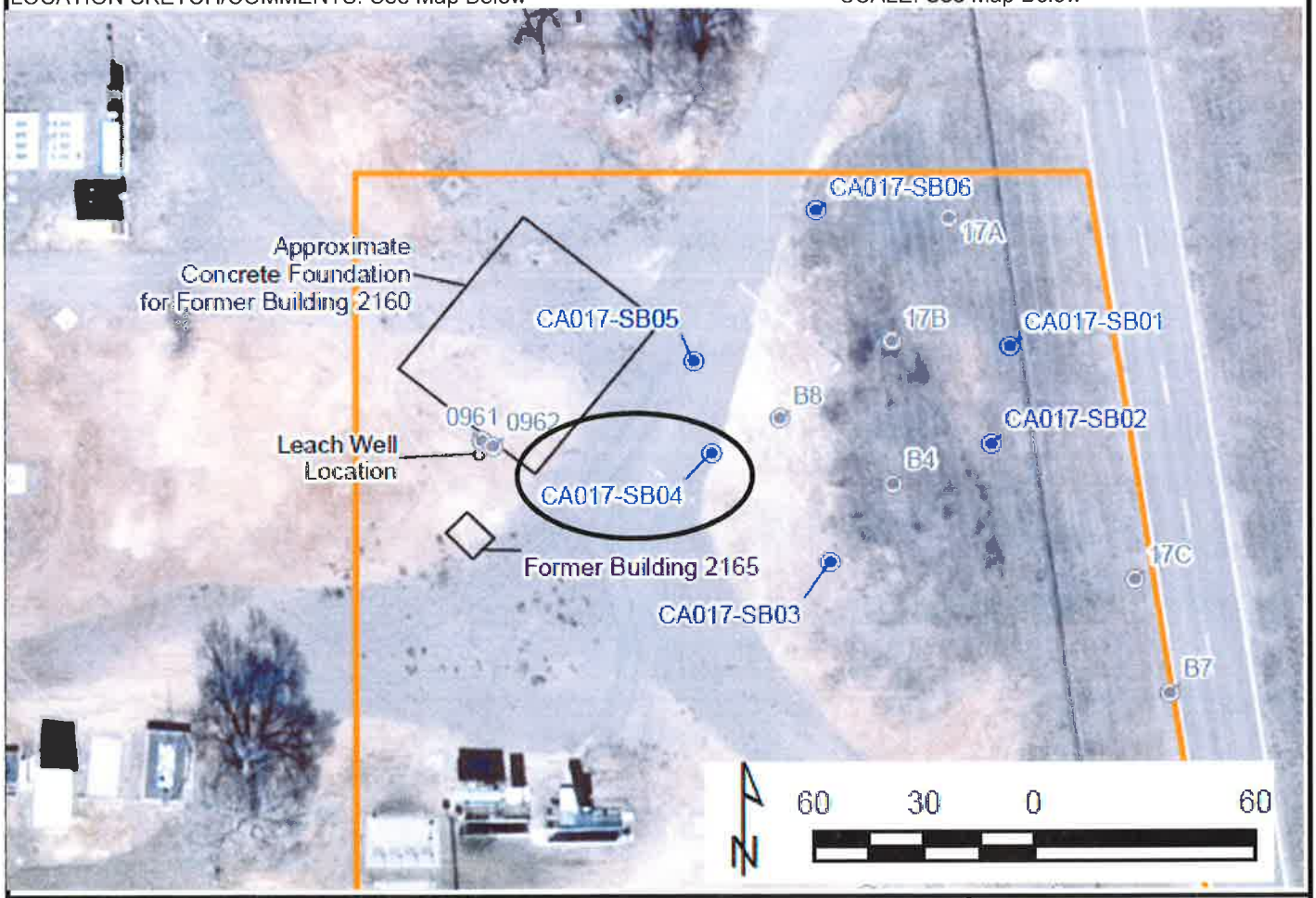
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X (6020A)	–	–	–	–	75 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X Bentonite Chips	N/A	NA	

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below



PROJECT	HOLE NO.
Cannon AFB PBR	CA017-SB04

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CA017-SB04

PROJECT: Cannon AFB PBR

Inspector: Jeff Carritt ~~Kyle Kloewer~~

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Gravel		N/A		PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1		FS=ND		CA017-SB04-002 @ 1002		R = 4'/5' + MS/MSD
	2	Sandy Silt (ML) Med Stiff - Stiff, moist - dry, low plastic, 16-30%. fine - Med. Sand, Some Caliche nodules up to 1/16" (Reddish-BRN)	FS=ND			X JC	Ogallala Formation
	3						
	4	Increasing Sand (31-49%) fine to Med.	FS=ND				
	5				CA017-SB04-005 @ 1010		
	6						R = 3.5'/5
		Sandy Silt - As Above					Photo #'s 102-2798 + 102-2799
	7	Charcoal Horizon, Black	FS=ND				Possible Burn Area
	8	Sandy Silt (ML) Soft to v. Soft, Dry, ~~low~~ JC, light BRN, low plastic, fine to Med Sand (31-49%) with embedded charcoal fragments up to 1/16"					
	9		FS=ND				
	10	Bottom of Boring @ 10' BGS			CA017-SB04-010 @ 1027		

Project: Cannon AFB PBR

HOLE NO. CA017-SB04

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0012AA	HOLE NUMBER: CA017-SB05	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR-SD017	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Site SD017	
	9. SURFACE ELEVATION: 4286 Feet Above Mean Sea Level	
	10. DATE STARTED: 05/08/2016	11. DATE COMPLETED: 05/08/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

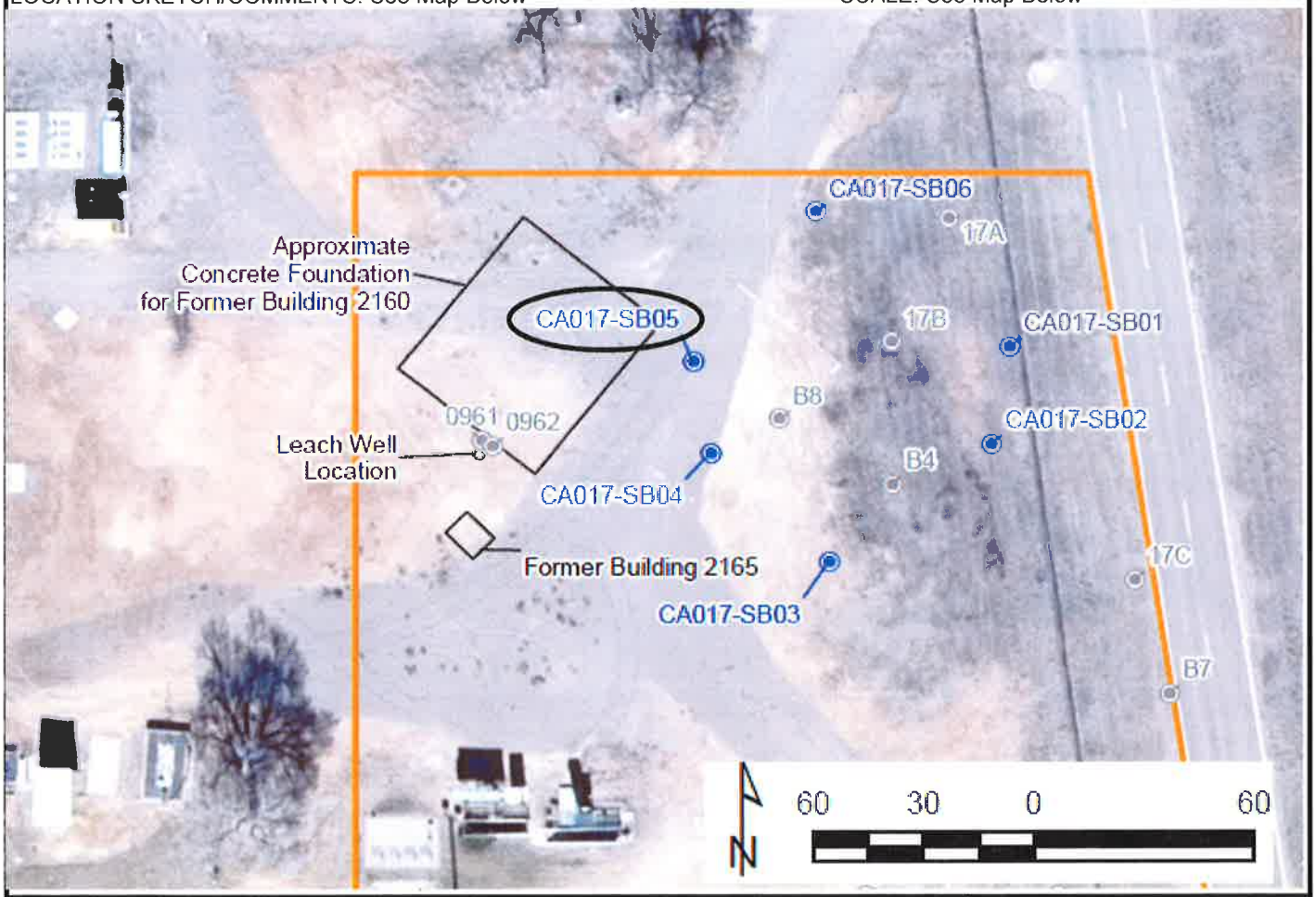
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X (6020A)	–	–	–	–	~~80~~ % 75 JC

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X Bentonite chips	N/A	NA	Jeffrey Cairnt

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below



PROJECT	HOLE NO.
Cannon AFB PBR	CA017-SB05

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CA017-SB05

PROJECT: Cannon AFB PBR

Inspector: Jeff Carritt ~~Kyle Kloewer~~

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Gravel		N/A		PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1	Sandy Silt (ML) Med. Stiff, Dry to Stiff, BRN, low plastic, some fine-med sand, some Caliche nodules up to 1/16"	FS=ND	JC	CA017-SB05-001 @ 1045		R = 4.86/5' JC Ogallala Formation
	2		FS=ND				
	3	Increased Sand, Reddish-BRN					
		Caliche					
	4	Gravel w/ pieces of charcoal	FS=ND				
	5	Sandy Silt (ML) Soft, Dry, Reddish-BRN, low plastic, some fine-med sand embedded charcoal			CA017-SB05-~~050~~ 005 @ 1051 (JC)		
	6	Gravel Sandy Silt - Same As Above	FS=ND				R = 3.5'/5'
	7						
	8	Caliche	FS=ND				
	9	Sandy Silt (ML) Med Stiff, Dry DK BRN to BLK, low plastic, with 5-15% coarse sand, gravel	FS=ND		CA017-SB05-010 @ 1100		
	10	Bottom of Boring At 10' BGS					

Project: Cannon AFB PBR

HOLE NO. CA017-SB05

HTRW DRILLING LOG

DISTRICT: FPM. Remediations, Inc./ 60425210.23446540.0012AA	HOLE NUMBER: CA017-SB06	
1. COMPANY NAME: URS Group, Inc.	2. DRILLING SUBCONTRACTOR: Plains Environmental Services	SHEET 1 OF SHEETS 2
3. PROJECT: Cannon AFB PBR-SD017	4. LOCATION: Cannon AFB, Clovis, New Mexico	
5. NAME OF DRILLER: Jesse Kalvig	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7720 DT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5 Foot, Geoprobe MC5 Macrocore Sampler; 5 Foot, Geoprobe 2.25 inch OD Rods	8. HOLE LOCATION: Site SD017	
	9. SURFACE ELEVATION: 4286 Feet Above Mean Sea Level	
	10. DATE STARTED: 05/08/2016	11. DATE COMPLETED: 05/08/2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: Not Encountered	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Feet Below Ground Surface	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

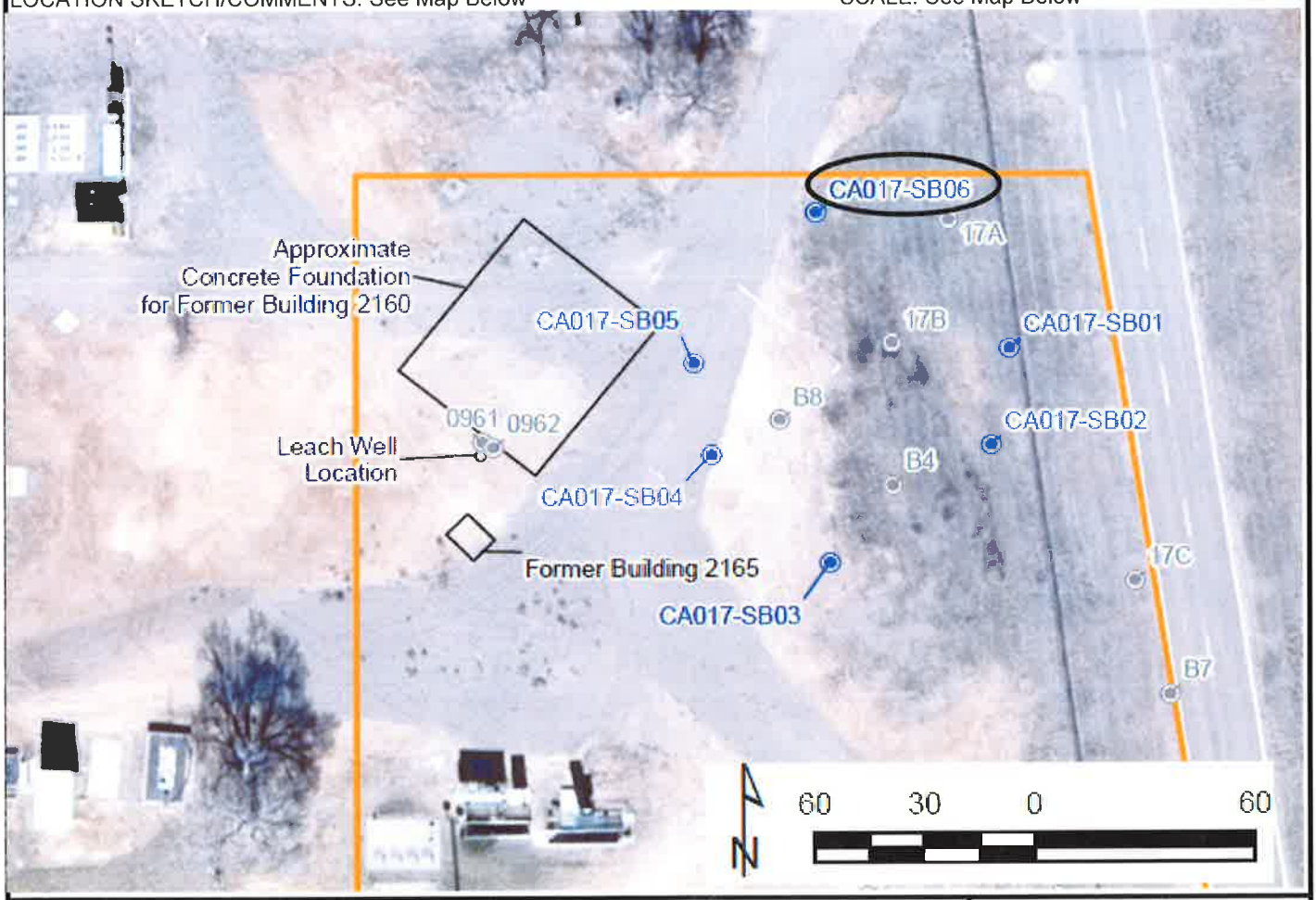
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	–	–	N/A

20. SAMPLES FOR CHEMICAL	Arsenic	Thallium	SVOCs	TAL Metals/PCBs	PAHs	21. TOTAL CORE RECOVERY
3 Samples	X (6020A)	–	–	–	–	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Soil Boring	X Bentonite chips	N/A	NA	

LOCATION SKETCH/COMMENTS: See Map Below

SCALE: See Map Below



PROJECT	HOLE NO.
Cannon AFB PBR	CA017-SB06

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NO. CA017-SB076 JC

PROJECT: Cannon AFB PBR

Inspector: Jeff Carrizal ~~Kyle Kloewer~~

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Gravel w/ Caliche nodules		N/A	CA017-SB076-000.5 @ 1115	PP=Pocket Pen (Tons/FT²)	BKG = Background BGS = Below Ground Surface FS=Field Screening HS = Head Space Screening PPM=Parts Per Million ND=Non Detect R=Run (feet)/Recovery (feet)
	1	Sandy Silt (ML) Soft to Med Stiff, Dry, low plastic, 5-15% fine Sand	FS=ND				R=5'/5' Ogallala Formation
	2		FS=ND				
	3	Becoming Reddish-BRN (JC) Increased clay					
	4	Caliche - pulverized petro-Calcic horizon	FS=ND		CA017-SB076-005 @ 1121 (JC)		
	5	CL (JC) Silty Clay (CL) Med. Stiff to Stiff, Dry, light BRN, low plasticity 5-15% sand, caliche mottling					
	6		FS=ND				R=5'/5'
	7	Increasing clay Reddish BRN					
	8		FS=ND				
	9	light red to white, less clay, more silt, trace fine sand	FS=ND		CA017-SB076-010 @ 1128		
	10	Bottom of Boring At 10' BGS					

Project: Cannon AFB PBR

HOLE NO. CA017-SB076 JC

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

C.1 – Arsenic Background Locations

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16B005**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16B005**

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 02-11-2016
EMAX Batch No.: 16B005

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Revised Laboratory Report
Project: Cannon AFB PBR

Enclosed is the Laboratory report for samples received on 02/02/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CABAC-SB01-000.5	B005-01	02/01/16	SOIL	2 METALS BY ICP-MS
CABAC-SB01-005	B005-02	02/01/16	SOIL	2 METALS BY ICP-MS
CABAC-SB01-010	B005-03	02/01/16	SOIL	2 METALS BY ICP-MS
CABAC-SB01-110	B005-04	02/01/16	SOIL	CANCELLED

The results are summarized on the following pages.

The report was revised on 02/11/16 to remove sample B005-04 per client request.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

Revised Report

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B005

METHOD SW6020A
TOTAL METALS BY ICP-MS

A total of three (3) soil samples were received on 02/02/16 to be analyzed for Total Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) LCS was analyzed. All Analytes in IMB003SL - all analytes were within LCS QC limits. 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) MS was analyzed. B005-01M (CABAC-SB01-000.5MS) - matrix spike recovery for all analytes were within MS QC limits. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC 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.

Revised Report

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16B005
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7822 8340 0572	Recipient I. PATEL
☐ EMAX Courier ☐ Client Delivery		Date 2/2/16 Time 0905

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: Original COC Does not match w/ Samples, ID. Info. Rec'd Email Copy later on.

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 2.7 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C

Thermometer: A - S/N _____ FM 1/20/15 B - S/N 140252070 C - S/N 140252067 (D) - S/N 150555630

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action

2/2/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

☐ Continue to next page.

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in _____	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	_____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	_____
D10	No initial/date on corrections in COC/label	D22	_____	R10	_____
D11	Container count mismatch COC vs received	D23	_____	R11	_____
D12	Container size mismatch COC vs received	D24	_____	R12	_____

REVIEWS:

Sample Labeling [signature] Date 2/2/16 2/2/16

SRF [signature] Date 2/2/16

PM [signature] Date 2/2/16

ORIGIN ID:CVNA (402) 321-0977
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 01FEB16
ACTWGT: 20.60 LB
CAD: 006993959/SSFE1621
DIMS: 18x12x10 IN

BILL THIRD PARTY

Part # 156297-455 REV 0 9/15

TO **EMAX LABORATORIES**

1835 W. 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J19101040101691101

TUE - 02 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7822 8340 0572**

A7 HHRA

90501
CA-US **LAX**

Cecilia Chavez 16B005

From: Andy Mai
Sent: Tuesday, February 02, 2016 11:04 AM
To: 'Zorinsky, Jennifer'
Cc: Cecilia Chavez; Mary J Mendoza; Hanh Bui
Subject: RE: Cannon

Hi Jennifer,

Per our conversation, we will login in the four samples according the labels and proceed with the analysis for Arsenic and Thallium. Please let me know if there are 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:
February 15th

From: Andy Mai
Sent: Tuesday, February 02, 2016 10:34 AM
To: 'Zorinsky, Jennifer'
Subject: FW: Cannon
Importance: High

Hi Jennifer,

We received 4 jars from Cannon, but the COC only list 1 sample which does not match with any of the jars received. Please advise on how to proceed.

We received the following:

4 1 - 4 oz CABAC-SB01-005 @ 10:59
3 1 - 4 oz CABAC-SB01-010 @ 11:18
2 1 - 4 oz CABAC-SB01-110 @ 11:20
1 1 - 4 oz CABAC-SB01-000.5 @ 10:49

All collected 02/01.

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:
February 15th

From: Cecilia Chavez
Sent: Tuesday, February 02, 2016 10:13 AM
To: Andy Mai; Tu Nisamaneepong; Mary J Mendoza
Subject: RE: Cannon

Andy

The COC that came with the samples does not agree with what we received.

We received the following:

1 - 4 oz CABAC-SB01-005 @ 10:59

Andy Mai

From: Zorinsky, Jennifer [jennifer.zorinsky@aecom.com]
Sent: Wednesday, February 10, 2016 3:11 PM
To: Andy Mai
Subject: Cannon MS/MSD issues
Follow Up Flag: Follow up
Flag Status: Red

Andy,

Here is the total list of MS/MSD issues. In all cases, the sample ID with the 1 (e.g., CAxx-Sx-**1**xxx) is not a sample, but extra volume for MS/MSD analysis. Please let me know which ones are fixable, which ones require reanalysis, and whether or not there is sample volume remaining to reanalyze, if needed. In total, there are 12 samples, affecting 8 SDGs. The first two SDGs have already been reported. Again, I am very sorry for this mess.

16B005 – CABAC-SB01-110 is the MS/MSD volume for CABAC-SB01-010. Please revise the report to remove sample CABAC-SB01-110. MS/DUP was analyzed on CABAC-SB01-000.5. This is sufficient; no other changes needed.
16B012 – CABAC-SB07-110 is the MS/MSD volume for CABAC-SB07-010. Please revise the report to remove sample CABAC-SB07-110. Please change the MS/DUP reference sample to CABAC-SB07-010.
16B027 – CAAT109-SB20-110 is the MS/MSD volume for CAAT109-SB20-010. Please do not report CAAT109-SB20-110 as a sample. Please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B048 – CAAT109-SB28-120 is the MS/MSD volume for CAAT109-SB28-020. Please do not report CAAT109-SB28-120 as a sample. Please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B052 – CA508-SS11-100.5 is the MS/MSD volume for CA508-SS11-000.5. Please do not report CA508-SS11-100.5 as a sample. Please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B060 – CA504-SG03-S-110 is the MS/MSD volume for CA504-SG03-S-010. Please do not report CA504-SG03-S-110 as a sample. I emailed this one to you earlier. If I did not catch it in time, please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B069 – CA505-SB11-129 is the MS/MSD volume for CA505-SB11-029. Please do not report CA505-SB11-129 as a sample. CA507-SS78-100.5 is the MS/MSD volume for CA507-SS78-000.5. Please do not report CA507-SS78-100.5 as a sample. I emailed this one to you earlier. If I did not catch it in time, please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B070 – CA129-SB13-102 is the MS/MSD volume for CA129-SB13-002. Please do not report CA129-SB13-102 as a sample. CA129-SB18-105 is the MS/MSD volume for CA129-SB18-005. Please do not report CA129-SB18-105 as a sample. CA022-SS12-100.5 is the MS/MSD for CA022-SS12-000.5. Please do not report CA022-SS12-100.5 as a sample. CA022-SS11-100.5 is the MS/MSD volume for CA022-SS11-000.5. Please do not report CA022-SS11-100.5 as a sample. I emailed this one to you earlier. If I did not catch it in time, please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.

Please contact me with any questions.

5A

Corporation
ta, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16B005

Page 1 of 1

on AFB
s, NM

Project No. 23446540
Project Manager Mike Sonderman

Kloewer / Jessica Hoppmann

Type: Comp.	Type: Grab	Sample Identification	Matrix	Containers No.	Containers Type	Arsenic + Thallium (6020A)										Preservative / Remarks
1	X	CABAC-SB01-000.5	soil	1	4 oz jar	X										4°C 2/1/2016 1049
2	X	CABAC-SB01-005	soil	1	4 oz jar	X										4°C 2/1/2016 1059
3	X	CABAC-SB01-010	soil	1	4 oz jar	X										4°C 2/1/2016 1118
4	X	CABAC-SB01-110	soil	1	4 oz jar	X										4°C 2/1/2016 1120

Jessica Hoppmann 2/1/16

Signatures	Date	Time
[illegible]	2/1/16	1300
ory by: [illegible]	2/2/16	0905

Shipping Details
Method of Shipment: Fedex
Airbill No.: 8092 4626 6668
Lab Address: 1835 W. 205th St. Torrance, CA 90501

Special Instructions
24 hour turnaround

Copy rec'd 2/2/16

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 or estimated value.
*	*	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.

LAB CHRONICLE
TOTAL METALS BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B005
Instrument ID : T-IF6

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IMB003SB	1	NA	02/02/1618:14	02/02/1614:03	F6B02078	F6B02075	IMB003S	Method Blank
LCS1S	IMB003SL	1	NA	02/02/1618:18	02/02/1614:03	F6B02079	F6B02075	IMB003S	Lab Control Sample (LCS)
CABAC-SB01-000.5MS	B005-01M	0.976	13.0	02/02/1618:23	02/02/1614:03	F6B02080	F6B02075	IMB003S	Matrix Spike Sample (MS)
CABAC-SB01-000.5AS	B005-01A	0.976	13.0	02/02/1618:27	02/02/1614:03	F6B02081	F6B02075	IMB003S	Analytical Spike Sample
CABAC-SB01-000.5	B005-01	0.976	13.0	02/02/1618:31	02/02/1614:03	F6B020B2	F6B02075	IMB003S	Field Sample
CABAC-SB01-000.5DL	B005-01J	4.88	13.0	02/02/1618:35	02/02/1614:03	F6B02083	F6B02075	IMB003S	Diluted Sample
CABAC-SB01-000.5DUP	B005-01D	0.962	13.0	02/02/1618:40	02/02/1614:03	F6B02084	F6B02075	IMB003S	Duplicate Sample
CABAC-SB01-005	B005-02	0.962	11.1	02/02/1618:44	02/02/1614:03	F6B02085	F6B02075	IMB003S	Field Sample
CABAC-SB01-010	B005-03	0.990	6.5	02/02/1619:27	02/02/1614:03	F6B02095	F6B02087	IMB003S	Field Sample

FN - Filename
% Moist - Percent Moisture

Revised Report

RESULTS SUMMARIES

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/01/16
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	CABAC-SB01-000.5	Date Analyzed:	02/02/16 18:31
Lab Samp ID:	B005-01	Dilution Factor:	0.976
Lab File ID:	F6B02082	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	13.0
Calib. Ref.:	F6B02075	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.50	0.561	0.0561	0.112
Thallium	0.235J	0.561	0.0561	0.112

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/01/16
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	CABAC-SB01-005	Date Analyzed:	02/02/16 18:44
Lab Samp ID:	B005-02	Dilution Factor:	0.962
Lab File ID:	F6B02085	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	11.1
Calib. Ref.:	F6B02075	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.09	0.541	0.0541	0.108
Thallium	0.0850J	0.541	0.0541	0.108

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/01/16
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	CABAC-SB01-010	Date Analyzed:	02/02/16 19:27
Lab Samp ID:	B005-03	Dilution Factor:	0.990
Lab File ID:	F6B02095	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	6.5
Calib. Ref.:	F6B02087	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.85	0.529	0.0529	0.106
Thallium	0.0860J	0.529	0.0529	0.106

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QC SUMMARIES

METHOD BLANK

Method: 6020A

QC Measure: IMB003SB

Associated Samples:

CABAC-SB01-000.5
CABAC-SB01-005
CABAC-SB01-010

Revised Report

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	MBLK1S	Date Analyzed:	02/02/16 18:14
Lab Samp ID:	IMB003SB	Dilution Factor:	1
Lab File ID:	F6B0207B	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	NA
Calib. Ref.:	F6B02075	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

LCS/LCSD

Method: 6020A

QC Measure: IMB003SL

Associated Samples:

CABAC-SB01-000.5
CABAC-SB01-005
CABAC-SB01-010

Revised Report

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IMB003SB	IMB003SL		
LAB FILE ID:	F6B02078	F6B02079		
DATIME EXTRCTD:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	NA
DATIME ANALYZD:	02/02/1618:14	02/02/1618:18	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.4	97	80-120
Thallium	ND	20.0	20.5	102	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILTN FACTR:	0.976	0.976		
SAMPLE ID:	CABAC-SB01-000.5			
CONTROL NO.:	B005-01	B005-01M		
LAB FILE ID:	F6B02082	F6B02080		
DATIME EXTRCTD:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATIME ANALYZD:	02/02/1618:31	02/02/1618:23	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	4.50	22.4	25.3	93	80-120
Thallium	0.235J	22.4	21.6	95	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILUTION FACTOR:	0.976	4.88		
SAMPLE ID:	CABAC-SB01-000	CABAC-SB01-000		
EMAX SAMP ID:	B005-01	B005-01J		
LAB FILE ID:	F6B02082	F6B02083		
DATE EXTRACTED:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATE ANALYZED:	02/02/1618:31	02/02/1618:35	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	4.5	4.69	4	10
Thallium	.235J	ND	NA	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILTN FACTR:	0.976	0.976		
SAMPLE ID:	CABAC-SB01-000.5			
CONTROL NO.:	B005-01	B005-01A		
LAB FILE ID:	F6B02082	F6B02081		
DATIME EXTRCTD:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATIME ANALYZD:	02/02/1618:31	02/02/1618:27	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	4.50	22.4	26.6	99	75-125
Thallium	0.235J	22.4	22.9	101	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILUTION FACTOR:	0.976	0.962		
SAMPLE ID:	CABAC-SB01-000	CABAC-SB01-000		
EMAX SAMP ID:	B005-01	B005-01D		
LAB FILE ID:	F6B02082	F6B02084		
DATE EXTRACTED:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATE ANALYZED:	02/02/1618:31	02/02/1618:40	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	4.5	4.66	4	20
Thallium	.235J	.232J	NA	20

RAW DATA

METALS

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/01/16
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	CABAC-SB01-000.5	Date Analyzed:	02/02/16 18:31
Lab Samp ID:	B005-01	Dilution Factor:	0.976
Lab File ID:	F6B02082	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	13.0
Calib. Ref.:	F6B02075	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.50	0.561	0.0561	0.112
Thallium	0.235J	0.561	0.0561	0.112

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/01/16
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	CABAC-SB01-005	Date Analyzed:	02/02/16 18:44
Lab Samp ID:	B005-02	Dilution Factor:	0.962
Lab File ID:	F6B02085	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	11.1
Calib. Ref.:	F6B02075	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.09	0.541	0.0541	0.108
Thallium	0.0850J	0.541	0.0541	0.108

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/01/16
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	CABAC-SB01-010	Date Analyzed:	02/02/16 19:27
Lab Samp ID:	B005-03	Dilution Factor:	0.990
Lab File ID:	F6B02095	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	6.5
Calib. Ref.:	F6B02087	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.85	0.529	0.0529	0.106
Thallium	0.0860J	0.529	0.0529	0.106

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METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/02/16
SDG NO.	: 16B005	Date Extracted:	02/02/16 14:03
Sample ID:	MBLK1S	Date Analyzed:	02/02/16 18:14
Lab Samp ID:	IMB003SB	Dilution Factor:	1
Lab File ID:	F6B02078	Matrix :	SOIL
Ext Btch ID:	IMB003S	% Moisture :	NA
Calib. Ref.:	F6B02075	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IMB003SB	IMB003SL		
LAB FILE ID:	F6B02078	F6B02079		
DATIME EXTRCTD:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	NA
DATIME ANALYZD:	02/02/1618:14	02/02/1618:18	DATE RECEIVED:	02/02/16
PREP. BATCH:	IM8003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.4	97	80-120
Thallium	ND	20.0	20.5	102	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILTN FACTR:	0.976	0.976		
SAMPLE ID:	CABAC-SB01-000.5			
CONTROL NO.:	B005-01	B005-01M		
LAB FILE ID:	F6B02082	F6B02080		
DATIME EXTRCTD:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATIME ANALYZD:	02/02/1618:31	02/02/1618:23	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	4.50	22.4	25.3	93	80-120
Thallium	0.235J	22.4	21.6	95	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILUTION FACTOR:	0.976	4.88		
SAMPLE ID:	CABAC-SB01-000	CABAC-SB01-000		
EMAX SAMP ID:	B005-01	B005-01J		
LAB FILE ID:	F6B02082	F6B02083		
DATE EXTRACTED:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATE ANALYZED:	02/02/1618:31	02/02/1618:35	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	4.5	4.69	4	10
Thallium	.235J	ND	NA	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: I6B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILTN FACTR:	0.976	0.976		
SAMPLE ID:	CABAC-SB01-000.5			
CONTROL NO.:	B005-01	B005-01A		
LAB FILE ID:	F6B02082	F6B02081		
DATIME EXTRCTD:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATIME ANALYZD:	02/02/1618:31	02/02/1618:27	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	4.50	22.4	26.6	99	75-125
Thallium	0.235J	22.4	22.9	101	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B005
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	13.0
DILUTION FACTOR:	0.976	0.962		
SAMPLE ID:	CABAC-SB01-000	CABAC-SB01-000		
EMAX SAMP ID:	B005-01	B005-01D		
LAB FILE ID:	F6B02082	F6B02084		
DATE EXTRACTED:	02/02/1614:03	02/02/1614:03	DATE COLLECTED:	02/01/16
DATE ANALYZED:	02/02/1618:31	02/02/1618:40	DATE RECEIVED:	02/02/16
PREP. BATCH:	IMB003S	IMB003S		
CALIB. REF:	F6B02075	F6B02075		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	4.5	4.66	4	20
Thallium	.235J	.232J	NA	20

ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	50	30	25	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/2/16 12:54

End Date: 2/2/16 22:52

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

- CCV-9 CCV10 Be failed
- CCB11 Mn > LOD

Book #:	AF6-015
Instrument No.:	F6
Analytical Batch:	IT6B02
Analytical Sequence:	F6 B02
Method File:	EMX6020H
Micropipette ID:	☐ ~~142781004~~
Micropipette ID:	☐ ~~ICP-06~~
Micropipette ID:	☐ ~~339362028~~
Micropipette ID:	☐ ~~GFAA-07~~
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☑ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B009.(7-03	MRL1 (1)	SM6B009.(8-07
S1	.T4.02	MRL2 (0.5)	.T9.01
S2	.T7.04	MRL3 (0.2)	.T9.02
S3	.T5.05	MRL4	NA
S4	.T3.07	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B009.T8-03
S7		Post-Spike 1	SMCA.0702-23
ICV	SM6B009.60-01	Post-Spike 2	02-24
CCV	.T7.06	Post-Spike 3	NA
ICSA	.T8.05	Post-Spike 4	
ICSAB	.T8.06		
6020 TUNE SOLN.	.T9.02		
200.8 TUNE SOLN.	.T9.03		

Analyzed By: CW

Date: 2/2/16

SEQUENCE FILE : IF6B02

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
F6B02003	BLNK	12:04	02/02/16	1.00
F6B02004	S0	12:08	02/02/16	1.00
F6B02005	S1 0.5	12:13	02/02/16	1.00
F6B02006	S2 50	12:17	02/02/16	1.00
F6B02007	S3 250	12:21	02/02/16	1.00
F6B02008	S4 500	12:25	02/02/16	1.00
F6B02009	ICV	12:29	02/02/16	1.00
F6B02010	ICB	12:33	02/02/16	1.00
F6B02011	MRLB0201	12:37	02/02/16	1.00
F6B02012	MRLB0202	12:41	02/02/16	1.00
F6B02013	ICSA	12:46	02/02/16	1.00
F6B02014	ICSAB	12:50	02/02/16	1.00
F6B02015	MRLB0203	12:55	02/02/16	1.00
F6B02016	CCV1	12:59	02/02/16	1.00
F6B02017	CCB1	13:03	02/02/16	1.00
F6B02018	LRLO	13:07	02/02/16	1.00
F6B02019	LRAG	13:11	02/02/16	1.00
F6B02020	LRTR	13:16	02/02/16	1.00
F6B02021	LRALFE	13:19	02/02/16	1.00
F6B02022	LRCAT	13:24	02/02/16	1.00
F6B02023	LRP	13:28	02/02/16	1.00
F6B02024	LRW	13:33	02/02/16	1.00
F6B02025	LRSI	13:37	02/02/16	1.00
F6B02026	BLANK	13:41	02/02/16	1.00
F6B02027	CCV2	13:46	02/02/16	1.00
F6B02028	CCB2	13:49	02/02/16	1.00
F6B02029	BLANK	14:48	02/02/16	1.00
F6B02030	CCV3	14:52	02/02/16	1.00
F6B02031	CCB3	14:56	02/02/16	1.00
F6B02032	IMA013SB	15:00	02/02/16	1.00
F6B02033	IMA013SL	15:05	02/02/16	1.00
F6B02034	IMA013SC	15:09	02/02/16	1.00
F6B02035	L004-18M	15:13	02/02/16	1.00
F6B02036	L004-18S	15:17	02/02/16	1.00
F6B02037	L004-18A	15:22	02/02/16	1.00
F6B02038	L004-18	15:26	02/02/16	1.00
F6B02039	L004-18J	15:30	02/02/16	5.00
F6B02040	L004-22	15:34	02/02/16	1.00
F6B02041	BLANK	15:38	02/02/16	1.00
F6B02042	CCV4	15:43	02/02/16	1.00
F6B02043	CCB4	15:47	02/02/16	1.00
F6B02044	L004-30	15:51	02/02/16	1.00
F6B02045	L004-38	15:55	02/02/16	1.00
F6B02046	L004-42	15:59	02/02/16	1.00
F6B02047	L004-46	16:04	02/02/16	1.00
F6B02048	L004-62	16:08	02/02/16	1.00
F6B02049	L014-03	16:12	02/02/16	1.00
F6B02050	L014-24	16:16	02/02/16	1.00
F6B02051	L014-28	16:20	02/02/16	1.00
F6B02052	L014-32	16:24	02/02/16	1.00
F6B02053	BLANK	16:29	02/02/16	1.00

F6B02054	CCV5	16:33	02/02/16	1.00
F6B02055	CCB5	16:37	02/02/16	1.00
F6B02056	L014-36	16:41	02/02/16	1.00
F6B02057	L014-40	16:45	02/02/16	1.00
F6B02058	L039-04A	16:49	02/02/16	1.00
F6B02059	L039-04	16:54	02/02/16	1.00
F6B02060	L039-04J	16:58	02/02/16	5.00
F6B02061	L039-08I	17:02	02/02/16	10.00
F6B02062	BLANK	17:06	02/02/16	1.00
F6B02063	CCV6	17:11	02/02/16	1.00
F6B02064	CCB6	17:15	02/02/16	1.00
F6B02065	IMA010SB	17:19	02/02/16	1.00
F6B02066	IMA010SL	17:23	02/02/16	1.00
F6B02067	IMA010SC	17:28	02/02/16	1.00
F6B02068	BLANK	17:32	02/02/16	1.00
F6B02069	L039-19I	17:36	02/02/16	10.00
F6B02070	L039-21I	17:40	02/02/16	10.00
F6B02071	L039-23I	17:45	02/02/16	10.00
F6B02072	L039-27I	17:49	02/02/16	10.00
F6B02073	L039-31I	17:53	02/02/16	10.00
F6B02074	L039-33I	17:57	02/02/16	10.00
F6B02075	CCV7	18:02	02/02/16	1.00
F6B02076	CCB7	18:05	02/02/16	1.00
F6B02077	IMA010SB	18:10	02/02/16	1.00
F6B02078	IMB003SB	18:14	02/02/16	1.00
F6B02079	IMB003SL	18:18	02/02/16	1.00
F6B02080	B005-01M	18:23	02/02/16	1.00
F6B02081	B005-01A	18:27	02/02/16	1.00
F6B02082	B005-01	18:31	02/02/16	1.00
F6B02083	B005-01J	18:35	02/02/16	5.00
F6B02084	B005-01D	18:40	02/02/16	1.00
F6B02085	B005-02	18:44	02/02/16	1.00
F6B02086	BLANK	18:48	02/02/16	1.00
F6B02087	CCV8	18:53	02/02/16	1.00
F6B02088	CCB8	18:56	02/02/16	1.00
F6B02089	IMA012WB	19:01	02/02/16	1.00
F6B02090	IMA012WL	19:05	02/02/16	1.00
F6B02091	IMA012WC	19:09	02/02/16	1.00
F6B02092	A165-01A	19:14	02/02/16	1.00
F6B02093	A165-01	19:18	02/02/16	1.00
F6B02094	A165-01J	19:22	02/02/16	5.00
F6B02095	B005-03	19:27	02/02/16	1.00
F6B02096	B005-04	19:31	02/02/16	1.00
F6B02097	BLANK	19:35	02/02/16	1.00
F6B02098	MRLB0204	19:39	02/02/16	1.00
F6B02099	CCV9	19:44	02/02/16	1.00
F6B02100	CCB9	19:48	02/02/16	1.00
F6B02101	A086-01A	19:52	02/02/16	5.00
F6B02102	A086-01I	19:56	02/02/16	5.00
F6B02103	A086-01J	20:01	02/02/16	25.00
F6B02104	A086-01M	20:05	02/02/16	5.00
F6B02105	A086-01S	20:09	02/02/16	5.00
F6B02106	BLANK	20:13	02/02/16	1.00
F6B02107	MRLB0205	20:18	02/02/16	1.00

F6B02108	CCV10	20:22	02/02/16	1.00
F6B02109	CCB10	20:26	02/02/16	1.00
F6B02110	A135-01	20:30	02/02/16	1.00
F6B02111	A135-02	20:35	02/02/16	1.00
F6B02112	A135-03	20:39	02/02/16	1.00
F6B02113	BLANK	20:43	02/02/16	1.00
F6B02114	CCV11	20:48	02/02/16	1.00
F6B02115	CCB11	20:52	02/02/16	1.00

SDG : 16B005 UNIT : % ICPMS CHECK : IF6B02 DATE : 02/02/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	97	98	99	99	98	97	104	102	103	101	102	100	100	97	100	94	100	97	97	100	101	98	86*	104	92	99	97	98	102	103	98	97	99
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0201	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0202	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	98	92	95	----	102	100	98	108	----	----	----	96	----	----	----	----	----	----	----	----	103	----	----	----	----	----	----	----	----	----
ICSAB	98	102	95	96	90	91	109	101	101	99	108	101	104	103	97	98	95	95	101	103	107	98	43*	103	88	97	95	100	102	101	99	98	102
MRLB0203	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	100	106	107	94	92	94	99	98	102	98	100	98	99	99	100	93	99	96	97	101	100	99	83*	102	97	99	97	99	100	101	98	96	97
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRLO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRAG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRTR	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRALFE	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRCAT	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRP	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRW	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRSI	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	102	108	106	94	87*	90	101	96	102	99	102	97	97	101	99	93	96	93	97	101	101	100	77*	103	96	99	98	99	100	101	96	94	96
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	100	100	95	99	91	94	104	101	103	99	102	96	97	97	99	89*	95	92	98	100	101	99	84*	103	96	99	100	101	102	101	96	95	100
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA013SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA013SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA013SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	99	103	100	99	94	96	105	102	105	99	101	95	97	97	98	94	93	92	97	100	100	102	84*	102	95	100	98	100	100	101	98	98	102
CCB4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-38	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-42	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-46	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-62	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-32	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV5	100	102	98	100	97	97	106	104	106	99	100	96	97	97	97	94	93	96	98	101	101	100	86*	103	95	99	97	100	100	101	98	97	100
CCB5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-36	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-40	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-04A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-04J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-08I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	98	98	94	101	98	101	107	106	105	99	100	96	95	95	97	93	91	94	96	101	100	100	84*	101	93	99	98	99	99	100	96	97	101
CCB6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA010SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA010SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA010SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-19I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-21I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-23I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-27I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-31I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-33I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	100	100	98	102	101	103	111*	108	106	101	101	95	95	98	98	96	92	95	97	102	99	98	81*	103	96	99	97	99	99	101	99	99	99
CCB7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA010SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB003SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB003SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	97	96	95	100	100	103	109	109	107	100	99	95	95	95	97	92	92	95	97	102	99	100	87*	99	94	97	96	97	97	100	98	98	100
CCB8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0204	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV9	94	88*	88*	102	103	105	114*	113*	108	102	100	96	95	94	96	92	92	95	96	102	98	98	89*	106	96	98	98	100	100	97	93	93	96
CCB9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0205	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV10	88*	77*	84*	99	106	108	115*	117*	108	101	101	96	94	94	96	93	93	96	94	104	98	96	82*	104	96	98	97	98	100	97	92	92	92
CCB10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV11	87*	77*	82*	98	105	107	115*	118*	109	102	101	97	95	94	97	93	94	98	94	104	98	97	81*	105	96	98	97	98	101	96	92	92	92
CCB11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

SDG : 16B005 UNIT : UG/L SUMMARY of CALIBRATION BLANKS : IF6B02 (SOIL) DATE : 02/02/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	-.026	.003	.049	-18.5	1.34	1.61	.764	-3.95	-.693	5.20	-.002	-.020	.026	.130	9.5B	.020	.031	.043	.025	.063	.082	.014	-.006	.302	.002	.016	.143	.066	.019	.039	.057	.015	.049
MRLB0201	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0202	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	.461	.010	.342	----	----	----	5.66	----	----	----	----	.098	1.29	.339	----	.263	.219	.632	2.33	.209	.065	.631	.741	----	.020	.270	.080	.035	.100	.122	.005	.204	.005
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0203	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	.114	-.001	-.005	-23.3	1.2B	1.41	.580	-6.56	.882	4.63	.050	-.025	.009	.074	8.45	.00B	.051	.039	.013	.029	.061	.015	-.009	.355	.000	.017	.081	.104	.026	.022	.026	.009	.033
LRLO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRAG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRTR	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRALFE	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRCAT	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRP	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRW	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
LRSI	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.143	-.002	-.069	-24.1	.776	.913	1.19	-4.80	3.71	4.00	.048	.000	.011	.051	7.23	.015	.137	.028	-.012	.037	.070	.012	-.011	.163	.000	.006	.081	.121	.019	.192	.020	.003	.033
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	.031	-.005	-.124	-20.B	1.49	1.27	.789	-1.61	5.40	4.97	.028	.039	.014	.065	8.04	.012	.152	.027	.032	.042	.081	.011	-.008	.153	.000	.013	.078	.050	.023	.059	.031	.006	.035
IMA013SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA013SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA013SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-1BA	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-1B	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-18J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB4	.241	-.003	-.062	-22.9	1.09	1.03	.856	-1.49	8.49	5.26	.025	.051	.017	.052	7.67	.010	.149	.025	.021	.053	.077	.013	-.009	.146	.000	.005	.082	.048	.022	.043	.027	.006	.031
L004-30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-38	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-42	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-46	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L004-62	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-32	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB5	.042	-.002	-.177	-26.3	1.15	1.11	.902	-.599	9.00	5.08	.022	.038	.015	.061	7.38	.010	.137	.023	.011	.047	.075	.015	-.005	.154	.000	.011	.081	.039	.031	.043	.031	.012	.033
L014-36	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L014-40	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-04A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-04J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-08I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB6	.084	-.003	-.204	-25.6	1.48	1.26	1.13	-.679	10.4	6.09	.017	.064	.026	.072	8.24	.011	.138	.025	.040	.071	.082	.014	-.007	.150	.001	.009	.085	.049	.030	.034	.034	.009	.033
IMA010SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA010SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA010SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-19I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-21I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-23I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-27I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-31I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L039-33I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB7	-.003	-.003	-.221	-26.7	1.64	1.23	.854	-.909	9.76	5.50	.019	.058	.026	.067	7.70	.008	.103	.025	.030	.063	.059	.014	-.007	.154	.002	.012	.083	.043	.024	.034	.034	.006	.033
IMA010SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB003SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB003SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB8	-.072	-.003	-.173	-28.4	1.33	1.29	1.40	-.457	12.4	5.93	.025	.064	.022	.051	7.69	.008	.077	.021	.051	.074	.075	.013	-.002	.159	.000	.012	.086	.048	.034	.037	.039	.007	.031
IMA012WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B005-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0204	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB9	-.167	-.005	.664	-27.9	1.60	1.34	5.93	2.17	13.8	6.59	.033	.067	.021	.071	7.38	.009	.060	.021	.034	.094	.063	.020	-.000	.161	.001	.007	.080	.066	.043	.031	.037	.005	.031
A086-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0205	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB10	-.539	-.003	1.68	1.24	2.44	1.49	2.69	.435	15.4	7.65	.019	.108	.018	.083	8.08	.005	.086	.061	.046	.085	.086	.025	-.008	.142	.002	.008	.082	.053	.035	.027	.037	.004	.030
A135-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB11	-.508	-.005	1.61	-1.19	3.74	1.53	2.33	3.93	17.7	9.22	.058	.112	.026	.414	8.72	.011	.101	.040	.030	.091	.072	.039	-.005	.190	.000	.015	.089	.082	.046	.045	.039	.003	.032

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6B02001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6B02002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	F6B02003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1102	F6B02004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	F6B02005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	F6B02006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	F6B02007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	F6B02008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	F6B02009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1102	F6B02010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B02011	MRLB0201	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	F6B02012	MRLB0202	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	F6B02013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	F6B02014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	F6B02015	MRLB0203	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2101	F6B02018	LRLo	Be, B, Li 100 ppb	1.000				
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2102	F6B02019	LRAg	Ag 100 ppb	1.000				
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2103	F6B02020	LRTr	3/1 ppm trace	1.000				
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2104	F6B02021	LRAlFe	100 ppm Al, Fe	1.000				
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2105	F6B02022	LRCat	100/300 ppm Cat	1.000				
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2106	F6B02023	LRP	200 ppm	1.000				
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2107	F6B02024	LRW	1 ppm	1.000				
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2108	F6B02025	LRSi	10 ppm	1.000				
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02026	BLANK		1.000				
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02027	CCV2		1.000				
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02028	CCB2		1.000				
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02029	BLANK		1.000				
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02030	CCV3		1.000				
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02031	CCB3		1.000				
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2109	F6B02032	IMA013SB		1.000				
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2110	F6B02033	IMA013SL		1.000				
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2111	F6B02034	IMA013SC		1.000				
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2112	F6B02035	L004-18M		1.000				
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2201	F6B02036	L004-18S		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
42	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2202	F6B02037	L004-18A		1.000				
43	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2203	F6B02038	L004-18		1.000				
44	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2204	F6B02039	L004-18J		5.000				
45	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2205	F6B02040	L004-22		1.000				
46	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02041	BLANK		1.000				
47	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02042	CCV4		1.000				
48	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02043	CCB4		1.000				
49	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2206	F6B02044	L004-30		1.000				
50	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2207	F6B02045	L004-38		1.000				
51	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2208	F6B02046	L004-42		1.000				
52	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2209	F6B02047	L004-46		1.000				
53	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2210	F6B02048	L004-62		1.000				
54	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2211	F6B02049	L014-03		1.000				
55	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2212	F6B02050	L014-24		1.000				
56	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2301	F6B02051	L014-28		1.000				
57	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2302	F6B02052	L014-32		1.000				
58	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02053	BLANK		1.000				
59	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02054	CCV5		1.000				
60	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02055	CCB5		1.000				
61	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2303	F6B02056	L014-36		1.000				
62	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2304	F6B02057	L014-40		1.000				
63	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2305	F6B02058	L039-04A		1.000				
64	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2306	F6B02059	L039-04		1.000				
65	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2307	F6B02060	L039-04J		5.000				
66	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2308	F6B02061	L039-08I		10.00				
67	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02062	BLANK		1.000				
68	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02063	CCV6		1.000				
69	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02064	CCB6		1.000				
70	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2309	F6B02065	IMA010SB		1.000				
71	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2310	F6B02066	IMA010SL		1.000				
72	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2311	F6B02067	IMA010SC		1.000				
73	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2309	F6B02068	BLANK		1.000				
74	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2312	F6B02069	L039-19I		10.00				
75	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2401	F6B02070	L039-21I		10.00				
76	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2402	F6B02071	L039-23I		10.00				
77	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2403	F6B02072	L039-27I		10.00				
78	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2404	F6B02073	L039-31I		10.00				
79	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2405	F6B02074	L039-33I		10.00				
80	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02075	CCV7		1.000				
81	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02076	CCB7		1.000				
82	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2309	F6B02077	IMA010SB		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
83	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2406	F6B02078	IMB003SB		1.000				
84	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2407	F6B02079	IMB003SL		1.000				
85	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2408	F6B02080	B005-01M		1.000				
86	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2409	F6B02081	B005-01A		1.000				
87	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2410	F6B02082	B005-01		1.000				
88	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2411	F6B02083	B005-01J		5.000				
89	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2412	F6B02084	B005-01D		1.000				
90	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2501	F6B02085	B005-02		1.000				
91	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02086	BLANK		1.000				
92	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02087	CCV8		1.000				
93	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02088	CCB8		1.000				
94	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBW	2504	F6B02089	IMA012WB		1.000				
95	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2505	F6B02090	IMA012WL		1.000				
96	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2506	F6B02091	IMA012WC		1.000				
97	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2507	F6B02092	A165-01A	Mn>7 UPR	1.000				
98	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2508	F6B02093	A165-01		1.000				
99	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2509	F6B02094	A165-01J		5.000				
100	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2502	F6B02095	B005-03		1.000				
101	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2503	F6B02096	B005-04		1.000				
102	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02097	BLANK		1.000				
103	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B02098	MRLB0204	1/100/10 ppb	1.000				
104	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02099	CCV9	Be failed	1.000				
105	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02100	CCB9		1.000				
106	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3101	F6B02101	A086-01A		5.000				
107	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3102	F6B02102	A086-01I		5.000				
108	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3103	F6B02103	A086-01J		25.00				
109	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3104	F6B02104	A086-01M		5.000				
110	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3105	F6B02105	A086-01S		5.000				
111	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02106	BLANK		1.000				
112	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B02107	MRLB0205	1/100/10 ppb	1.000				
113	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02108	CCV10	Be failed	1.000				
114	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02109	CCB10		1.000				
115	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2510	F6B02110	A135-01	Mn>7 UPR 5X	1.000				
116	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2511	F6B02111	A135-02	Mn>7 UPR 10X	1.000				
117	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2512	F6B02112	A135-03	Mn>7 UPR 5X	1.000				
118	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B02113	BLANK		1.000				
119	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B02114	CCV11		1.000				
120	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B02115	CCB11	Mn>LOD	1.000				
121		Keyword		StandBy							
122		Keyword		SMPLEND	End of SMPL						
123		Keyword		End	End of Sequence						

Last Calib: Feb 02, 2016 12:27 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62016\b\if6b02.b\f6b02004.d\f6b02004.d#	S0	Feb 2 2016 12:08 pm
2	c:\data\if62016\b\if6b02.b\f6b02005.d\f6b02005.d#	S1 0.5	Feb 2 2016 12:13 pm
3	c:\data\if62016\b\if6b02.b\f6b02006.d\f6b02006.d#	S2 50	Feb 2 2016 12:17 pm
4	c:\data\if62016\b\if6b02.b\f6b02007.d\f6b02007.d#	S3 250	Feb 2 2016 12:21 pm
5	c:\data\if62016\b\if6b02.b\f6b02008.d\f6b02008.d#	S4 500	Feb 2 2016 12:25 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

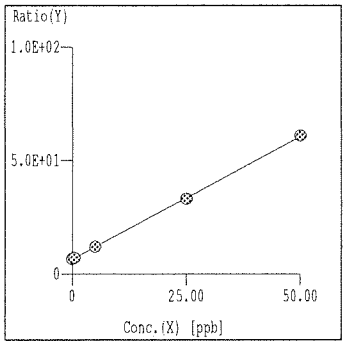
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

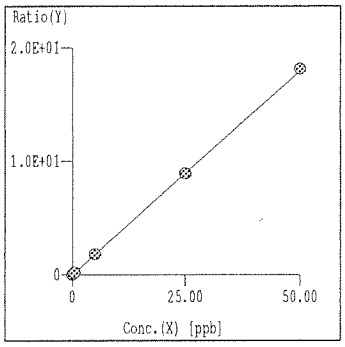
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(3)	7	Li	6	ppb



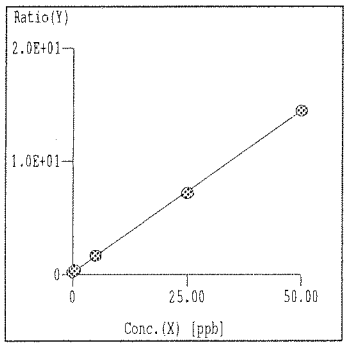
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.081E+000*X +6.539E+000
X = 9.248E-001*Y -6.047E+000
DL = 1.367E-01 ppb
BEC = 6.047 ppb

Step	Mass	Element	ISTD	Unit
(3)	9	Be	6	ppb



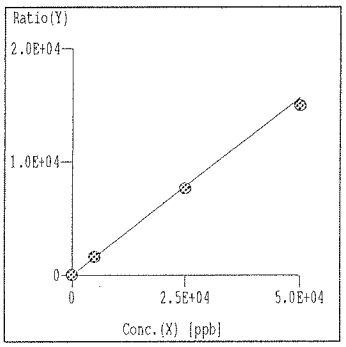
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.591E-001*X +4.851E-003
X = 2.785E+000*Y -1.351E-002
DL = 6.636E-03 ppb
BEC = 1.351E-02 ppb

Step	Mass	Element	ISTD	Unit
(3)	11	B	6	ppb



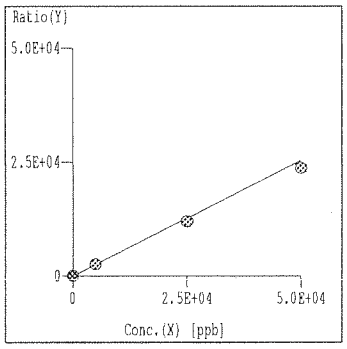
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.857E-001*X +2.019E-001
X = 3.500E+000*Y -7.068E-001
DL = 4.982E-02 ppb
BEC = 7.068E-01 ppb

Step	Mass	Element	ISTD	Unit
(1)	23	Na	45	ppb



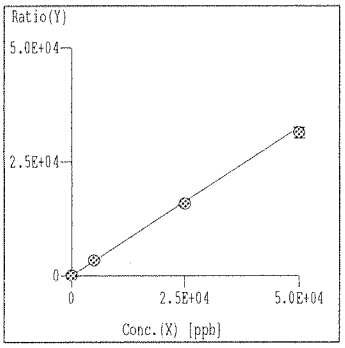
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.130E-001*X +1.500E+001
X = 3.195E+000*Y -4.793E+001
DL = 1.983 ppb
BEC = 47.93 ppb

Step	Mass	Element	ISTD	Unit
(3)	24	Mg	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.087E-001*X +4.404E-001
X = 1.966E+000*Y -8.658E-001
DL = 3.786E-02 ppb
BEC = 8.658E-01 ppb

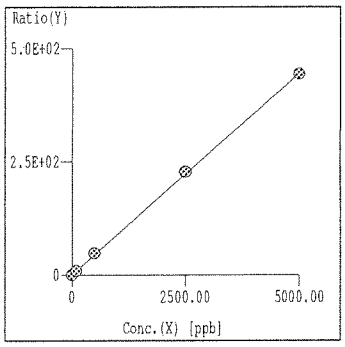
Step	Mass	Element	ISTD	Unit
(3)	27	Al	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.526E-001*X +1.791E-001
X = 1.532E+000*Y -2.745E-001
DL = 2.064E-02 ppb
BEC = 2.745E-01 ppb

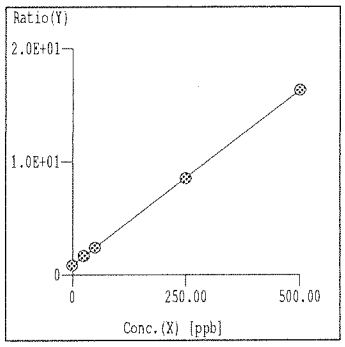
=== Graph Detail ===

Step Mass Element ISTD Unit
(1) 28 Si 45 ppb



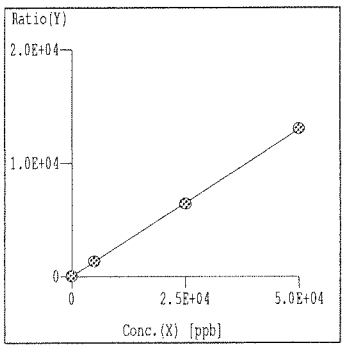
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.910E-002*X +9.387E-002
X = 1.122E+001*Y -1.054E+000
DL = 1.755E-01 ppb
BEC = 1.054 ppb

Step Mass Element ISTD Unit
(3) 31 P 45 ppb



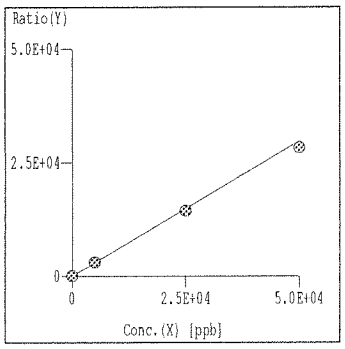
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.087E-002*X +8.791E-001
X = 3.240E+001*Y -2.848E+001
DL = 2.001 ppb
BEC = 28.48 ppb

Step Mass Element ISTD Unit
(2) 39 K 45 ppb



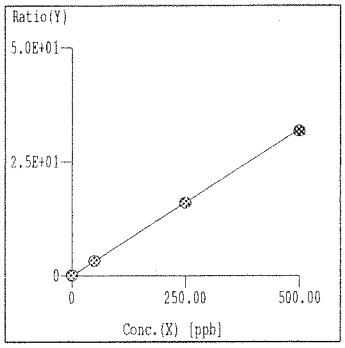
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.593E-001*X +1.303E+001
X = 3.856E+000*Y -5.026E+001
DL = 2.863E-01 ppb
BEC = 50.26 ppb

Step Mass Element ISTD Unit
(1) 40 Ca 45 ppb



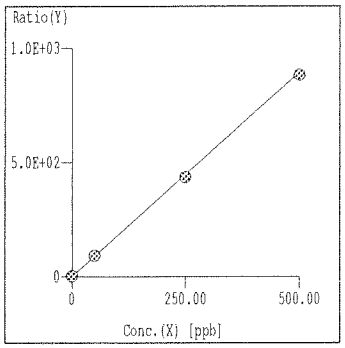
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.962E-001*X +2.030E+000
X = 1.677E+000*Y -3.406E+000
DL = 2.059E-01 ppb
BEC = 3.406 ppb

Step Mass Element ISTD Unit
(3) 47 Ti 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.425E-002*X +3.363E-003
X = 1.556E+001*Y -5.234E-002
DL = 2.524E-02 ppb
BEC = 5.234E-02 ppb

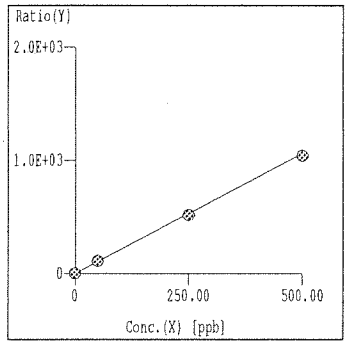
Step Mass Element ISTD Unit
(2) 51 V 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.790E+000*X +9.306E-001
X = 5.586E-001*Y -5.198E-001
DL = 2.988E-02 ppb
BEC = 5.198E-01 ppb

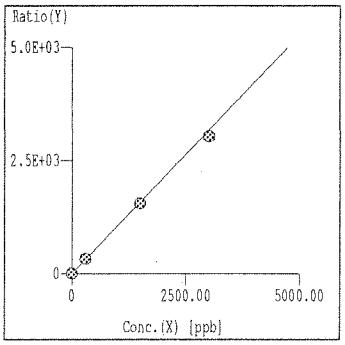
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(2) 52 Cr	45	ppb



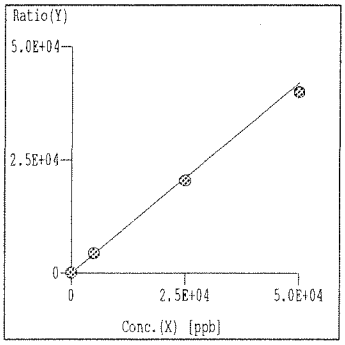
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.125E+000*X +1.598E-001
X = 4.705E-001*Y -7.520E-002
DL = 3.881E-03 ppb
BEC = 7.520E-02 ppb

Step Mass Element	ISTD	Unit
(3) 55 Mn	45	ppb



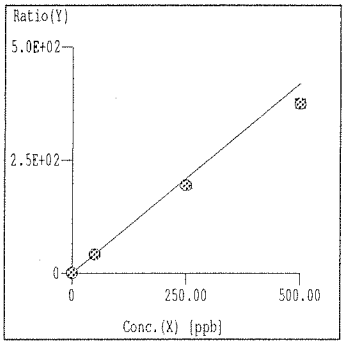
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.057E+000*X +1.465E-001
X = 9.461E-001*Y -1.386E-001
DL = 9.819E-03 ppb
BEC = 1.386E-01 ppb

Step Mass Element	ISTD	Unit
(1) 56 Fe	45	ppb



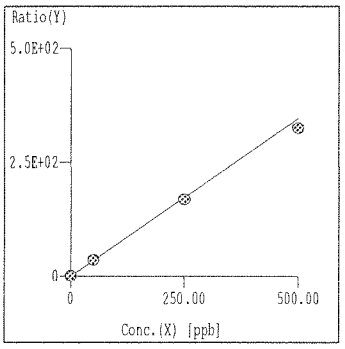
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.422E-001*X +7.395E-001
X = 1.187E+000*Y -8.781E-001
DL = 5.396E-02 ppb
BEC = 8.781E-01 ppb

Step Mass Element	ISTD	Unit
(3) 59 Co	45	ppb



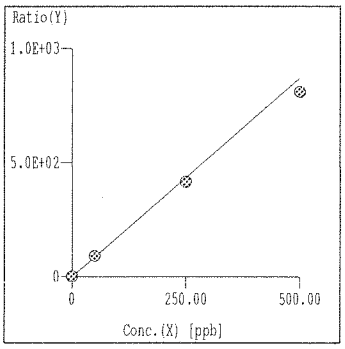
Curve Fit: Y=aX+b
r = 0.9998
Y = 8.395E-001*X +1.976E-002
X = 1.191E+000*Y -2.354E-002
DL = 1.623E-03 ppb
BEC = 2.354E-02 ppb

Step Mass Element	ISTD	Unit
(2) 60 Ni	45	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 6.930E-001*X +4.864E-002
X = 1.443E+000*Y -7.019E-002
DL = 2.288E-02 ppb
BEC = 7.019E-02 ppb

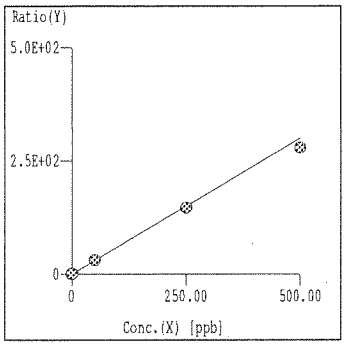
Step Mass Element	ISTD	Unit
(2) 63 Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.743E+000*X +4.949E-002
X = 5.737E-001*Y -2.839E-002
DL = 3.284E-03 ppb
BEC = 2.839E-02 ppb

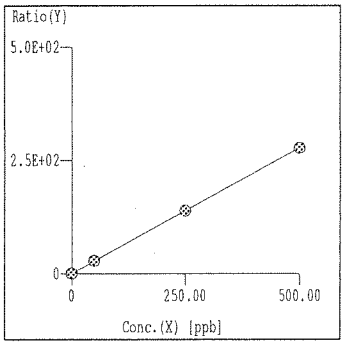
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 66 Zn	72	ppb



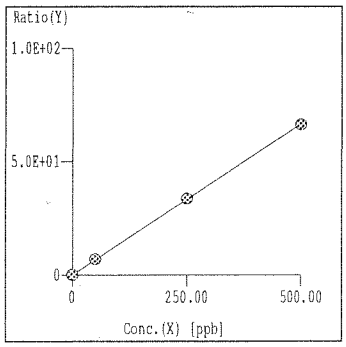
Curve Fit: Y=aX+b
r = 0.9997
Y = 5.992E-001*X +1.666E-001
X = 1.669E+000*Y -2.780E-001
DL = 3.049E-02 ppb
BEC = 2.780E-01 ppb

Step Mass Element	ISTD	Unit
(2) 75 As	72	ppb



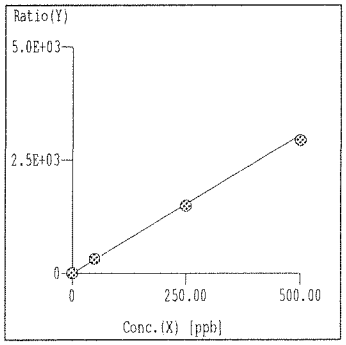
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.553E-001*X +4.839E-002
X = 1.801E+000*Y -8.714E-002
DL = 2.985E-02 ppb
BEC = 8.714E-02 ppb

Step Mass Element	ISTD	Unit
(1) 78 Se	72	ppb



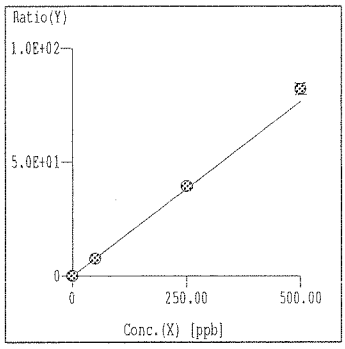
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.334E-001*X +1.231E-003
X = 7.498E+000*Y -9.234E-003
DL = 1.683E-02 ppb
BEC = 9.234E-03 ppb

Step Mass Element	ISTD	Unit
(3) 88 Sr	72	ppb



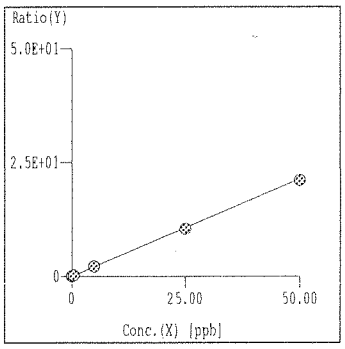
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.111E+000*X +8.083E-002
X = 1.636E-001*Y -1.323E-002
DL = 2.737E-03 ppb
BEC = 1.323E-02 ppb

Step Mass Element	ISTD	Unit
(3) 95 Mo	115	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.531E-001*X +1.456E-003
X = 6.534E+000*Y -9.513E-003
DL = 2.633E-03 ppb
BEC = 9.513E-03 ppb

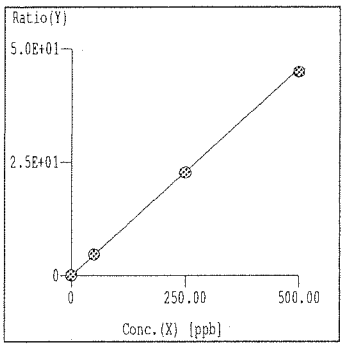
Step Mass Element	ISTD	Unit
(3) 107 Ag	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.279E-001*X +1.269E-003
X = 2.337E+000*Y -2.966E-003
DL = 3.118E-03 ppb
BEC = 2.966E-03 ppb

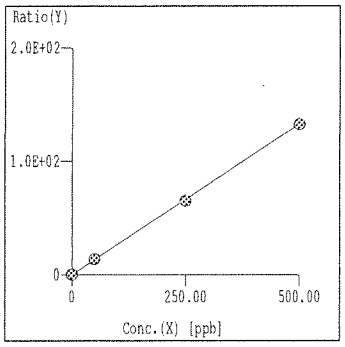
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 111 Cd	115	ppb



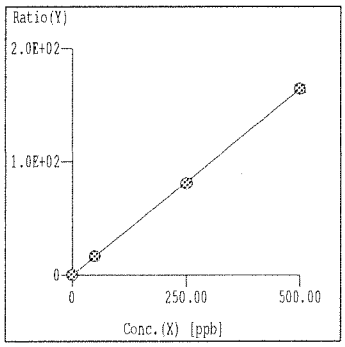
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.149E-002*X +3.513E-004
X = 1.093E+001*Y -3.840E-003
DL = 6.298E-03 ppb
BEC = 3.840E-03 ppb

Step Mass Element	ISTD	Unit
(3) 118 Sn	115	ppb



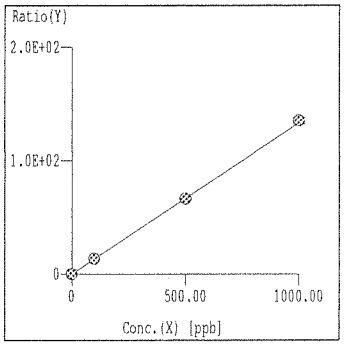
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.660E-001*X +3.493E-003
X = 3.759E+000*Y -1.313E-002
DL = 7.883E-03 ppb
BEC = 1.313E-02 ppb

Step Mass Element	ISTD	Unit
(3) 121 Sb	115	ppb



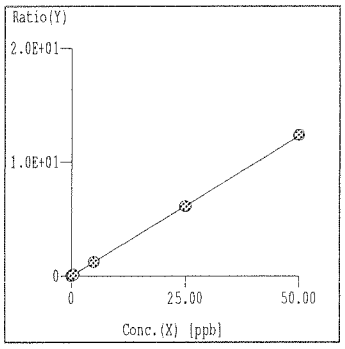
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.281E-001*X +1.677E-002
X = 3.047E+000*Y -5.112E-002
DL = 4.857E-03 ppb
BEC = 5.112E-02 ppb

Step Mass Element	ISTD	Unit
(3) 137 Ba	115	ppb



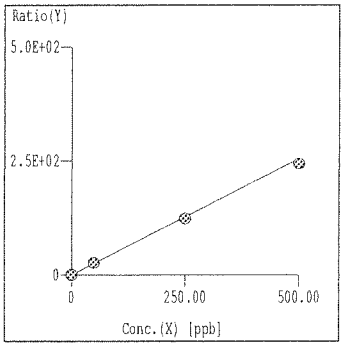
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.334E-001*X +2.625E-003
X = 7.499E+000*Y -1.968E-002
DL = 7.652E-03 ppb
BEC = 1.968E-02 ppb

Step Mass Element	ISTD	Unit
(3) 182 W	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.460E-001*X +1.825E-003
X = 4.065E+000*Y -7.418E-003
DL = 2.971E-03 ppb
BEC = 7.418E-03 ppb

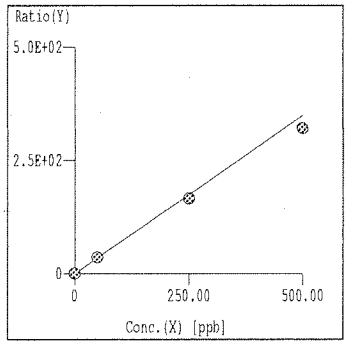
Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.099E-001*X +2.408E-003
X = 1.961E+000*Y -4.722E-003
DL = 8.422E-04 ppb
BEC = 4.722E-03 ppb

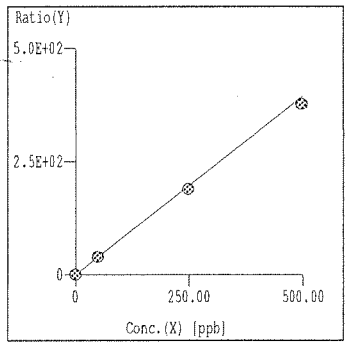
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 6.990E-001*X +1.461E-002
X = 1.431E+000*Y -2.090E-002
DL = 2.642E-03 ppb
BEC = 2.090E-02 ppb

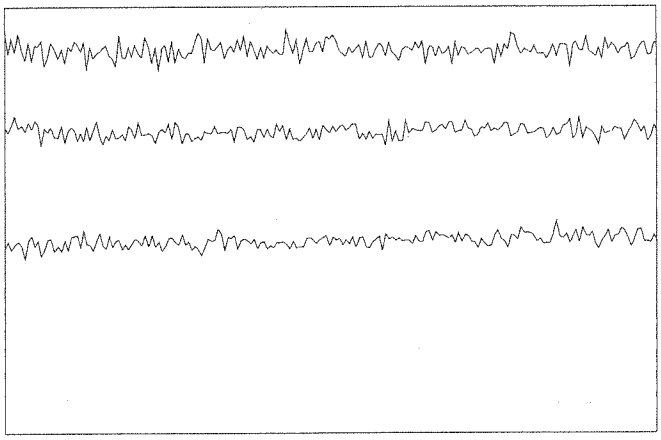
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 7.899E-001*X +7.337E-004
X = 1.266E+000*Y -9.289E-004
DL = 1.133E-04 ppb
BEC = 9.289E-04 ppb

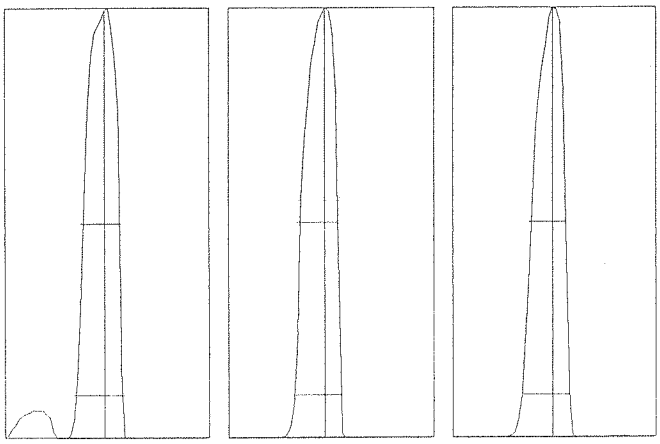
Tune Report

Tune File : NORM.U
Comment : IF6B02



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.755%
Doubly Charged:	70/140	0.793%

m/z	Range	Count	Mean	RSD%	Background
7	50,000	22499.0	22631.3	3.16	1.10
89	50,000	45718.0	45008.6	2.03	1.60
205	50,000	35387.0	35434.6	2.07	5.40
156/140	5	1.761%	1.817%	5.14	
70/140	2	0.944%	0.883%	5.45	



m/z:	7	89	205
Height:	22,827	45,719	36,289
Axis:	7.00	88.95	205.00
W-50%:	0.60	0.60	0.55
W-10%:	0.7500	0.700	0.700

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : Feb 02, 2016 11:26:39
Printed : Feb 02, 2016 11:26:42

Tune Report

Tune File : NORM.U
Comment : IF6B02

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-24 V	Axis Gain	:	0.9995
Torch-H	:	-0.7 mm	Omega Lens-ce	:	1.4 V	Axis Offset	:	-0.05
Torch-V	:	0.5 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.15 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2120 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1430 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

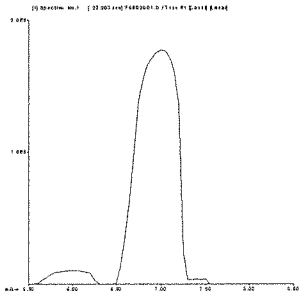
Generated : Feb 02, 2016 11:26:39
Printed : Feb 02, 2016 11:26:44

6020 QC Tune Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02001.D
Date Acquired:	Feb 2 2016 11:55 am
Acq. Method:	TN6020_C.M
Operator:	CCapul
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	1.35	5.00	
59 Co	0.75	5.00	
115 In	1.00	5.00	
205 Tl	2.02	5.00	



7 Li

Mass Calib.

Actual: 7.00

Required: 6.90 - 7.10

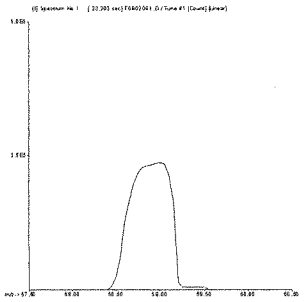
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



59 Co

Mass Calib.

Actual: 58.95

Required: 58.90 - 59.10

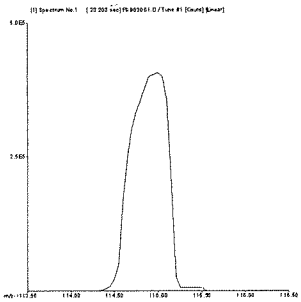
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



115 In

Mass Calib.

Actual: 114.95

Required: 114.90 - 115.10

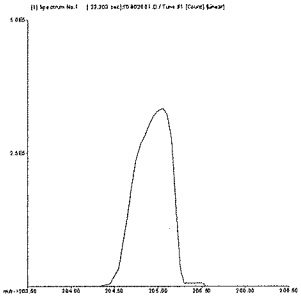
Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02003
Date Acquired:	Feb 2 2016 12:04 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H
Last Cal Update:	Feb 02 2016 12:07 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1732897.00	A	44190.00	2.55
7	Li	114571.00	P	345.40	0.30
9	Be	127.78	P	3.85	3.01
11	B	3672.81	P	129.40	3.52
23	Na	203525.91	P	707.10	0.35
24	Mg	12802.58	P	238.80	1.87
27	Al	6477.20	P	202.40	3.12
28	Si	1591.25	P	79.33	4.99
31	P	23055.16	P	783.90	3.40
39	K	40407.26	P	428.70	1.06
40	Ca	38974.85	P	553.80	1.42
45	Sc	1384451.00	A	24260.00	1.75
45	Sc	308678.31	P	1708.00	0.55
45	Sc	2765087.00	A	20000.00	0.72
47	Ti	67.78	P	16.78	24.76
51	V	2697.16	P	73.41	2.72
52	Cr	560.90	P	23.69	4.22
55	Mn	3887.32	P	16.68	0.43
56	Fe	12412.35	P	248.60	2.00
59	Co	743.38	P	50.34	6.77
60	Ni	150.45	P	2.78	1.85
63	Cu	231.34	P	8.11	3.51
66	Zn	1321.22	P	81.95	6.20
72	Ge	337670.41	P	5116.00	1.52
72	Ge	150149.91	P	1542.00	1.03
72	Ge	566371.88	P	2254.00	0.40
75	As	59.56	P	6.68	11.21
78	Se	5.56	P	1.39	24.98
88	Sr	515.59	P	48.58	9.42
90	Zr	476.69	P	44.85	9.41
95	Mo	64.45	P	25.02	38.82
107	Ag	58.89	P	6.94	11.78
111	Cd	16.37	P	7.94	48.50
115	In	4145559.00	A	33770.00	0.81
118	Sn	210.01	P	50.33	23.97
121	Sb	788.94	P	53.99	6.84
137	Ba	163.34	P	23.33	14.28
159	Tb	6347034.00	A	50110.00	0.79
182	W	130.01	P	31.80	24.46
205	Tl	218.90	P	22.69	10.37
208	Pb	1221.18	P	84.42	6.91
209	Bi	3924302.00	A	36680.00	0.93
235	U	12.22	P	3.85	31.49
238	U	63.34	P	10.00	15.79

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02004
Date Acquired:	Feb 2 2016 12:08 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1102
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H
Last Cal Update:	Feb 02 2016 12:07 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1679596.00	A	29410.00	1.75
7	Li	110015.20	P	1126.00	1.02
9	Be	82.23	P	13.47	16.38
11	B	3290.48	P	83.76	2.55
23	Na	208244.41	P	2144.00	1.03
24	Mg	12015.20	P	197.20	1.64
27	Al	4885.42	P	117.50	2.41
28	Si	1294.56	P	82.23	6.35
31	P	22769.87	P	559.00	2.46
39	K	40059.62	P	75.00	0.19
40	Ca	27918.48	P	336.10	1.20
45	Sc	1396934.00	A	11900.00	0.85
45	Sc	307639.69	P	1158.00	0.38
45	Sc	2728522.00	A	6863.00	0.25
47	Ti	83.34	P	14.53	17.44
51	V	2661.15	P	48.39	1.82
52	Cr	486.01	P	7.86	1.62
55	Mn	3951.79	P	94.09	2.38
56	Fe	10288.39	P	229.60	2.23
59	Co	534.47	P	13.47	2.52
60	Ni	126.45	P	16.13	12.76
63	Cu	145.34	P	6.36	4.38
66	Zn	892.28	P	30.79	3.45
72	Ge	339885.19	P	1244.00	0.37
72	Ge	148814.91	P	1100.00	0.74
72	Ge	555501.63	P	3501.00	0.63
75	As	68.22	P	8.04	11.78
78	Se	3.78	P	2.52	66.81
88	Sr	443.36	P	32.83	7.40
90	Zr	407.80	P	40.05	9.82
95	Mo	60.00	P	5.77	9.62
107	Ag	52.22	P	18.96	36.31
111	Cd	13.76	P	7.79	56.64
115	In	4115787.00	A	44750.00	1.09
118	Sn	144.45	P	28.74	19.90
121	Sb	688.93	P	20.10	2.92
137	Ba	104.45	P	15.03	14.39
159	Tb	6212593.00	A	63570.00	1.02
182	W	117.78	P	15.40	13.08
205	Tl	148.90	P	10.18	6.84
208	Pb	866.71	P	45.83	5.29
209	Bi	3861342.00	A	3155.00	0.08
235	U	3.33	P	3.33	99.99
238	U	45.56	P	1.93	4.23

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02005.D\F6B02005.D#
Date Acquired: Feb 2 2016 12:13 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:11 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1616650.00	A	9425.00	0.58
7 Li	114295.80	P	1375.00	1.20
9 Be	2913.72	P	150.50	5.17
11 B	5955.85	P	138.30	2.32
23 Na	320155.09	P	3098.00	0.97
24 Mg	710182.38	M	12960.00	1.82
27 Al	909206.63	A	12740.00	1.40
28 Si	126319.90	P	1757.00	1.39
31 P	43353.96	P	424.60	0.98
39 K	82990.47	P	1182.00	1.42
40 Ca	453569.69	P	6695.00	1.48
45 Sc	1324377.00	A	33480.00	2.53
45 Sc	298252.31	P	997.50	0.33
45 Sc	2613510.00	A	31720.00	1.21
47 Ti	1095.64	P	66.20	6.04
51 V	5520.63	P	21.10	0.38
52 Cr	3864.53	P	42.73	1.11
55 Mn	19885.28	P	419.60	2.11
56 Fe	662386.00	P	8135.00	1.23
59 Co	12469.08	P	231.70	1.86
60 Ni	1292.73	P	36.35	2.81
63 Cu	3115.47	P	33.05	1.06
66 Zn	4291.88	P	168.40	3.92
72 Ge	319623.09	P	2503.00	0.78
72 Ge	144139.59	P	1144.00	0.79
72 Ge	534206.81	P	3861.00	0.72
75 As	482.01	P	15.07	3.13
78 Se	224.67	P	11.01	4.90
88 Sr	17774.99	P	477.30	2.69
90 Zr	15305.41	P	259.20	1.69
95 Mo	3069.33	P	107.90	3.52
107 Ag	8423.93	P	379.50	4.51
111 Cd	1924.12	P	82.71	4.30
115 In	3974387.00	A	29480.00	0.74
118 Sn	5414.58	P	44.86	0.83
121 Sb	7286.59	P	135.80	1.86
137 Ba	2869.29	P	75.61	2.64
159 Tb	6085316.00	A	84570.00	1.39
182 W	6890.91	P	123.10	1.79
205 Tl	17249.60	P	247.90	1.44
208 Pb	24353.03	P	364.30	1.50
209 Bi	3743100.00	A	57730.00	1.54
235 U	196.68	P	23.33	11.86
238 U	26059.22	P	186.30	0.71

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1616650.00	0.58	1679596.50	96.3	60 - 125	
45 Sc	1324376.80	2.53	1396933.60	94.8	60 - 125	
45 Sc	298252.34	0.33	307639.66	96.9	60 - 125	
45 Sc	2613510.00	1.21	2728522.00	95.8	60 - 125	
72 Ge	319623.16	0.78	339885.25	94.0	60 - 125	
72 Ge	144139.61	0.79	148814.88	96.9	60 - 125	
72 Ge	534206.75	0.72	555501.63	96.2	60 - 125	
115 In	3974386.50	0.74	4115787.00	96.6	60 - 125	
159 Tb	6085316.00	1.39	6212593.00	98.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02006.D\F6B02006.D#
Date Acquired: Feb 2 2016 12:17 pm
Operator: CCapul
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:16 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1566033.00	A	6392.00	0.41
7 Li	186584.41	P	1618.00	0.87
9 Be	28175.08	P	85.23	0.30
11 B	25876.77	P	222.90	0.86
23 Na	21866220.00	A	300000.00	1.37
24 Mg	67219312.00	A	384200.00	0.57
27 Al	87762352.00	A	600000.00	0.68
28 Si	654611.63	P	4485.00	0.69
31 P	63174.29	P	70.74	0.11
39 K	3985239.00	A	21100.00	0.53
40 Ca	40660840.00	A	451600.00	1.11
45 Sc	1362786.00	A	19100.00	1.40
45 Sc	298233.81	P	859.40	0.29
45 Sc	2621616.00	A	29720.00	1.13
47 Ti	84884.93	P	1521.00	1.79
51 V	273217.59	P	1043.00	0.38
52 Cr	326975.41	P	3514.00	1.07
55 Mn	8436832.00	A	24300.00	0.29
56 Fe	58703232.00	A	168400.00	0.29
59 Co	1080584.00	A	12590.00	1.17
60 Ni	107225.90	P	641.10	0.60
63 Cu	269663.31	P	2356.00	0.87
66 Zn	162694.50	P	1425.00	0.88
72 Ge	325024.59	P	1584.00	0.49
72 Ge	142769.50	P	265.20	0.19
72 Ge	527527.69	P	5489.00	1.04
75 As	40323.29	P	323.90	0.80
78 Se	22378.53	P	121.30	0.54
88 Sr	1656373.00	A	15930.00	0.96
90 Zr	121944.20	P	717.50	0.59
95 Mo	297659.31	P	2721.00	0.91
107 Ag	84455.37	P	384.00	0.45
111 Cd	181182.80	P	1363.00	0.75
115 In	3927710.00	A	5098.00	0.13
118 Sn	527185.00	P	1625.00	0.31
121 Sb	646043.63	P	1141.00	0.18
137 Ba	523364.31	P	2103.00	0.40
159 Tb	6109288.00	A	51000.00	0.83
182 W	74137.62	P	745.00	1.00
205 Tl	1593585.00	A	6053.00	0.38
208 Pb	2170062.00	A	19550.00	0.90
209 Bi	3652768.00	A	28880.00	0.79
235 U	14894.62	P	113.70	0.76
238 U	2413521.00	A	14010.00	0.58

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1566033.10	0.41	1679596.50	93.2	60 - 125	
45 Sc	1362786.50	1.40	1396933.60	97.6	60 - 125	
45 Sc	298233.81	0.29	307639.66	96.9	60 - 125	
45 Sc	2621616.30	1.13	2728522.00	96.1	60 - 125	
72 Ge	325024.66	0.49	339885.25	95.6	60 - 125	
72 Ge	142769.48	0.19	148814.88	95.9	60 - 125	
72 Ge	527527.75	1.04	555501.63	95.0	60 - 125	
115 In	3927709.50	0.13	4115787.00	95.4	60 - 125	
159 Tb	6109288.00	0.83	6212593.00	98.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02007.D\F6B02007.D#
Date Acquired: Feb 2 2016 12:21 pm
Operator: CCapul
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:20 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1461796.00	A	14340.00	0.98
7	Li	482912.00	P	8976.00	1.86
9	Be	130163.60	P	1839.00	1.41
11	B	104425.30	P	837.90	0.80
23	Na	100671600.00	A	1042000.00	1.04
24	Mg	302407200.00	A	3730000.00	1.23
27	Al	399831710.00	A	9173000.00	2.29
28	Si	3003780.00	A	20180.00	0.67
31	P	215830.80	P	4238.00	1.96
39	K	18553290.00	A	38710.00	0.21
40	Ca	189397790.00	A	2708000.00	1.43
45	Sc	1318457.00	A	16120.00	1.22
45	Sc	289140.09	P	1305.00	0.45
45	Sc	2533743.00	A	41790.00	1.65
47	Ti	404984.41	P	4745.00	1.17
51	V	1257484.00	A	5197.00	0.41
52	Cr	1492586.00	A	7049.00	0.47
55	Mn	39216528.00	A	331200.00	0.84
56	Fe	269116420.00	A	2267000.00	0.84
59	Co	4919271.00	A	70560.00	1.43
60	Ni	487903.31	P	613.80	0.13
63	Cu	1201153.00	A	7146.00	0.59
66	Zn	737716.38	P	10160.00	1.38
72	Ge	306023.69	P	2758.00	0.90
72	Ge	135316.80	P	703.40	0.52
72	Ge	504839.81	P	2867.00	0.57
75	As	187692.30	P	366.60	0.20
78	Se	102481.40	P	364.80	0.36
88	Sr	7498644.00	A	155000.00	2.07
90	Zr	493855.91	P	10630.00	2.15
95	Mo	1426137.00	A	14460.00	1.01
107	Ag	376310.91	P	5368.00	1.43
111	Cd	821448.50	P	6928.00	0.84
115	In	3624615.00	A	62450.00	1.72
118	Sn	2353038.00	A	40020.00	1.70
121	Sb	2922019.00	A	22300.00	0.76
137	Ba	2397072.00	A	25670.00	1.07
159	Tb	5773571.00	A	62740.00	1.09
182	W	352831.81	P	5936.00	1.68
205	Tl	7106541.00	A	100700.00	1.42
208	Pb	9561236.00	A	36690.00	0.38
209	Bi	3264481.00	A	20000.00	0.61
235	U	67973.16	P	2015.00	2.96
238	U	10925270.00	A	222100.00	2.03

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1461795.60	0.98	1679596.50	87.0	60 - 125	
45	Sc	1318457.40	1.22	1396933.60	94.4	60 - 125	
45	Sc	289140.13	0.45	307639.66	94.0	60 - 125	
45	Sc	2533743.30	1.65	2728522.00	92.9	60 - 125	
72	Ge	306023.66	0.90	339885.25	90.0	60 - 125	
72	Ge	135316.83	0.52	148814.88	90.9	60 - 125	
72	Ge	504839.78	0.57	555501.63	90.9	60 - 125	
115	In	3624615.00	1.72	4115787.00	88.1	60 - 125	
159	Tb	5773571.00	1.09	6212593.00	92.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02008.D\F6B02008.D#
Date Acquired: Feb 2 2016 12:25 pm
Operator: CCapul
Sample Name: S4 500
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:24 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1385467.00	A	13280.00	0.96
7	Li	843340.88	A	4222.00	0.50
9	Be	251098.41	P	2181.00	0.87
11	B	199797.09	P	1416.00	0.71
23	Na	189764610.00	A	4505000.00	2.37
24	Mg	588419710.00	A	10740000.00	1.83
27	Al	779937470.00	A	17660000.00	2.26
28	Si	5635655.00	A	82950.00	1.47
31	P	405678.69	P	6799.00	1.68
39	K	36140272.00	A	226100.00	0.63
40	Ca	358959010.00	A	4956000.00	1.38
45	Sc	1269452.00	A	17820.00	1.40
45	Sc	277497.31	P	386.90	0.14
45	Sc	2485366.00	A	41180.00	1.66
47	Ti	787368.88	M	9831.00	1.25
51	V	2447297.00	A	4209.00	0.17
52	Cr	2880446.00	A	30770.00	1.07
55	Mn	75317152.00	A	484700.00	0.64
56	Fe	507447390.00	A	5544000.00	1.09
59	Co	9307790.00	A	100800.00	1.08
60	Ni	900936.50	A	16730.00	1.86
63	Cu	2245789.00	A	22910.00	1.02
66	Zn	1370568.00	A	14390.00	1.05
72	Ge	282321.19	P	2953.00	1.05
72	Ge	129847.70	P	379.40	0.29
72	Ge	492495.81	P	4701.00	0.95
75	As	359271.19	P	440.20	0.12
78	Se	186889.91	P	1172.00	0.63
88	Sr	14427160.00	A	285200.00	1.98
90	Zr	937631.38	A	10510.00	1.12
95	Mo	2754182.00	A	23510.00	0.85
107	Ag	707131.50	P	5627.00	0.80
111	Cd	1507039.00	A	23840.00	1.58
115	In	3361252.00	A	72670.00	2.16
118	Sn	4450393.00	A	64330.00	1.45
121	Sb	5511037.00	A	35420.00	0.64
137	Ba	4535615.00	A	10610.00	0.23
159	Tb	5477724.00	A	40430.00	0.74
182	W	677319.88	P	3847.00	0.57
205	Tl	13321260.00	A	65420.00	0.49
208	Pb	17577450.00	A	183000.00	1.04
209	Bi	2959036.00	A	58120.00	1.96
235	U	127614.30	P	2103.00	1.65
238	U	20633000.00	A	211800.00	1.03

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1385467.30	0.96	1679596.50	82.5	60 - 125	
45	Sc	1269452.00	1.40	1396933.60	90.9	60 - 125	
45	Sc	277497.28	0.14	307639.66	90.2	60 - 125	
45	Sc	2485365.80	1.66	2728522.00	91.1	60 - 125	
72	Ge	282321.25	1.05	339885.25	83.1	60 - 125	
72	Ge	129847.74	0.29	148814.88	87.3	60 - 125	
72	Ge	492495.81	0.95	555501.63	88.7	60 - 125	
115	In	3361251.80	2.16	4115787.00	81.7	60 - 125	
159	Tb	5477724.50	0.74	6212593.00	88.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02009.D\F6B02009.D#
Date Acquired:	Feb 2 2016 12:29 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	29.01	ppb	545412.0	0.80	30.00	90 - 110	
9 Be	29.39	ppb	151889.7	2.57	30.00	90 - 110	
11 B	29.57	ppb	124448.0	2.71	30.00	90 - 110	
23 Na	29610.00	ppb	119893300.0	1.09	30000.00	90 - 110	
24 Mg	29290.00	ppb	374377600.0	1.53	30000.00	90 - 110	
27 Al	29210.00	ppb	478981700.0	1.05	30000.00	90 - 110	
28 Si	3123.00	ppb	3595220.0	0.59	3000.00	90 - 110	
31 P	306.10	ppb	259551.4	0.24	300.00	90 - 110	
39 K	30920.00	ppb	22623910.0	0.64	30000.00	90 - 110	
40 Ca	30280.00	ppb	233211100.0	1.56	30000.00	90 - 110	
47 Ti	307.40	ppb	496467.1	0.71	300.00	90 - 110	
51 V	299.30	ppb	1512109.0	1.07	300.00	90 - 110	
52 Cr	299.30	ppb	1792293.0	0.30	300.00	90 - 110	
55 Mn	1948.00	ppb	51743220.0	0.05	2000.00	90 - 110	
56 Fe	30020.00	ppb	326505980.0	1.23	30000.00	90 - 110	
59 Co	280.90	ppb	5927535.0	1.03	300.00	90 - 110	
60 Ni	300.40	ppb	586599.2	0.52	300.00	90 - 110	
63 Cu	292.40	ppb	1435888.0	0.28	300.00	90 - 110	
66 Zn	290.00	ppb	872169.6	1.31	300.00	90 - 110	
75 As	300.40	ppb	220477.7	1.15	300.00	90 - 110	
78 Se	303.30	ppb	118551.7	1.04	300.00	90 - 110	
88 Sr	293.10	ppb	8981693.0	0.20	300.00	90 - 110	
90 Zr	25.67	ppb	595718.2	1.61	30.00	90 - 110	Fail
95 Mo	311.10	ppb	1686505.0	0.93	300.00	90 - 110	
107 Ag	27.52	ppb	417022.3	0.49	30.00	90 - 110	
111 Cd	297.70	ppb	964428.9	0.08	300.00	90 - 110	
118 Sn	291.50	ppb	2746240.0	0.85	300.00	90 - 110	
121 Sb	293.10	ppb	3406539.0	0.97	300.00	90 - 110	
137 Ba	306.50	ppb	1447735.0	1.39	300.00	90 - 110	
182 W	30.77	ppb	425316.4	0.25	30.00	90 - 110	
205 Tl	294.60	ppb	8438042.0	0.80	300.00	90 - 110	
208 Pb	291.70	ppb	11453400.0	1.17	300.00	90 - 110	
235 U	2.58	ppb	101877.6	0.78	2.20	90 - 110	Fail
238 U	296.80	ppb	13168480.0	0.36	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1438868.3	2.11	1679596.50	85.7	60 - 125	
45 Sc	1291534.8	0.35	1396933.60	92.5	60 - 125	
45 Sc	281709.3	0.39	307639.66	91.6	60 - 125	
45 Sc	2513059.0	0.43	2728522.00	92.1	60 - 125	
72 Ge	293114.4	0.27	339885.25	86.2	60 - 125	
72 Ge	132146.5	1.27	148814.88	88.8	60 - 125	
72 Ge	501426.7	0.98	555501.63	90.3	60 - 125	
115 In	3541307.8	0.69	4115787.00	86.0	60 - 125	
159 Tb	5617068.0	0.15	6212593.00	90.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02010.D\F6B02010.D#
Date Acquired:	Feb 2 2016 12:33 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1102
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0255	ppb	108985.1	347.81	0.20	
9 Be	0.0028	ppb	97.8	57.58	0.10	
11 B	0.0494	ppb	3616.1	32.04	5.00	
23 Na	-18.5000	ppb	131631.6	3.36	40.00	
24 Mg	1.3430	ppb	30561.4	19.90	10.00	
27 Al	1.6140	ppb	33521.7	16.41	20.00	
28 Si	0.7639	ppb	2313.6	14.44	20.00	
31 P	-3.9490	ppb	20593.1	2.31	10.00	
39 K	-0.6929	ppb	40529.9	70.28	20.00	
40 Ca	5.1960	ppb	73296.6	3.49	25.00	
47 Ti	-0.0021	ppb	87.8	580.45	0.50	
51 V	-0.0203	ppb	2819.9	13.70	0.50	
52 Cr	0.0258	ppb	676.7	7.73	0.20	
55 Mn	0.1301	ppb	7724.6	20.76	0.20	
56 Fe	9.5760	ppb	125787.6	6.20	10.00	
59 Co	0.0203	ppb	1001.2	31.07	0.20	
60 Ni	0.0309	ppb	220.9	26.67	0.20	
63 Cu	0.0426	ppb	390.0	17.37	0.40	
66 Zn	0.0254	ppb	1009.0	81.20	2.00	
75 As	0.0628	ppb	127.3	37.65	0.20	
78 Se	0.0824	ppb	42.0	26.18	0.20	
90 Zr	-0.0056	ppb	381.1	27.64	2.00	
95 Mo	0.3020	ppb	2004.7	10.29	0.40	
107 Ag	0.0019	ppb	86.7	142.14	0.20	
111 Cd	0.0164	ppb	77.5	66.85	0.20	
118 Sn	0.1429	ppb	1745.7	9.62	0.20	
121 Sb	0.0657	ppb	1611.3	9.24	0.40	
137 Ba	0.0188	ppb	215.6	12.23	0.20	
182 W	0.0394	ppb	730.0	18.28	1.00	
205 Tl	0.0574	ppb	2009.1	11.37	0.20	
208 Pb	0.0148	ppb	1581.2	36.79	0.10	
235 U	0.0003	ppb	18.9	57.54	1.00	
238 U	0.0489	ppb	2497.0	12.02	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1674000.1	0.92	1679596.50	99.7	60 - 125	
45 Sc	1429452.0	1.33	1396933.60	102.3	60 - 125	
45 Sc	315321.7	0.54	307639.66	102.5	60 - 125	
45 Sc	2719763.0	0.51	2728522.00	99.7	60 - 125	
72 Ge	343586.9	1.03	339885.25	101.1	60 - 125	
72 Ge	153018.1	1.07	148814.88	102.8	60 - 125	
72 Ge	554886.7	0.50	555501.63	99.9	60 - 125	
115 In	4205248.5	0.78	4115787.00	102.2	60 - 125	
159 Tb	6337058.5	0.97	6212593.00	102.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02011.D\F6B02011.D#
Date Acquired: Feb 2 2016 12:37 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: MRLB0201
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	121692.7	0.0000	0.8947	ppb	26.85	50.00	
9 Be	# 3	6	5529.0	0.0000	0.9365	ppb	6.03	50.00	
11 B	# 3	6	46416.1	0.0000	9.3170	ppb	5.37	50.00	
23 Na	# 1	45	572510.6	0.0000	87.9300	ppb	1.59	50000.00	
24 Mg	# 3	45	1405912.0	0.0000	103.9000	ppb	0.40	50000.00	
27 Al	# 3	45	1763994.0	0.0000	102.2000	ppb	0.58	50000.00	
28 Si	# 1	45	1875.7	0.0000	0.5099	ppb	7.02	5000.00	
31 P	# 3	45	65314.4	0.0000	51.7300	ppb	2.53	500.00	
39 K	# 2	45	123720.9	0.0000	107.7000	ppb	0.83	50000.00	
40 Ca	# 1	45	884901.4	0.0000	106.8000	ppb	0.77	50000.00	
47 Ti	# 3	45	2000.2	0.0000	1.1280	ppb	7.77	500.00	
51 V	# 2	45	8016.5	0.0000	0.9627	ppb	1.91	500.00	
52 Cr	# 2	45	7014.4	0.0000	1.0170	ppb	0.91	500.00	
55 Mn	# 3	45	35603.4	0.0000	1.1390	ppb	3.20	3000.00	
56 Fe	# 1	45	1262472.0	0.0000	110.5000	ppb	0.62	50000.00	
59 Co	# 3	45	23312.7	0.0000	1.0290	ppb	3.28	500.00	
60 Ni	# 2	45	2389.8	0.0000	1.0710	ppb	1.81	500.00	
63 Cu	# 2	45	5959.3	0.0000	1.1030	ppb	1.44	500.00	
66 Zn	# 3	72	34998.6	0.0000	10.6700	ppb	0.86	500.00	
75 As	# 2	72	886.0	0.0000	1.0270	ppb	2.40	500.00	
78 Se	# 1	72	455.6	0.0000	1.0460	ppb	3.67	500.00	
88 Sr	# 3	72	70125.7	0.0000	2.1380	ppb	1.05	500.00	
90 Zr	# 3	72	76577.9	0.0000	3.0840	ppb	3.95	50.00	
95 Mo	# 3	115	6629.6	0.0000	1.0680	ppb	2.83	500.00	
107 Ag	# 3	115	16447.9	0.0000	0.9534	ppb	4.46	50.00	
111 Cd	# 3	115	3983.7	0.0000	1.0790	ppb	3.84	500.00	
118 Sn	# 3	115	10847.9	0.0000	1.0010	ppb	0.46	500.00	
121 Sb	# 3	115	14086.4	0.0000	1.0170	ppb	1.36	500.00	
137 Ba	# 3	115	5578.0	0.0000	1.0210	ppb	4.97	1000.00	
182 W	# 3	159	26763.0	0.0000	1.7520	ppb	0.98	50.00	
205 Tl	# 3	159	34639.6	0.0000	1.0940	ppb	0.51	500.00	
208 Pb	# 3	159	47219.0	0.0000	1.0720	ppb	2.99	500.00	
235 U	# 3	159	384.5	0.0000	0.0087	ppb	11.83	30.00	
238 U	# 3	159	51166.6	0.0000	1.0460	ppb	2.22	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1621895.30	2.19	1679596.50	96.6	60 - 125	
45 Sc # 1	1346322.80	1.00	1396933.60	96.4	60 - 125	
45 Sc # 2	302051.97	0.41	307639.66	98.2	60 - 125	
45 Sc # 3	2637782.30	1.10	2728522.00	96.7	60 - 125	
72 Ge # 1	323704.41	0.64	339885.25	95.2	60 - 125	
72 Ge # 2	143268.94	1.10	148814.88	96.3	60 - 125	
72 Ge # 3	533569.94	1.70	555501.63	96.1	60 - 125	
115 In # 3	4020169.50	1.17	4115787.00	97.7	60 - 125	
159 Tb # 3	6184811.00	1.83	6212593.00	99.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02012.D\F6B02012.D#
Date Acquired:	Feb 2 2016 12:41 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLB0202
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	114271.2	0.0000	0.4929	ppb	12.90	50.00	
9 Be	# 3	6	2948.2	0.0000	0.4944	ppb	4.95	50.00	
11 B	# 3	6	5311.1	0.0000	0.4432	ppb	15.05	50.00	
23 Na	# 1	45	354899.7	0.0000	36.0900	ppb	3.26	50000.00	
24 Mg	# 3	45	713270.0	0.0000	53.1900	ppb	1.68	50000.00	
27 Al	# 3	45	887331.9	0.0000	52.1500	ppb	3.32	50000.00	
28 Si	# 1	45	1336.8	0.0000	0.0589	ppb	167.95	5000.00	
31 P	# 3	45	20566.9	0.0000	-2.7930	ppb	13.82	500.00	
39 K	# 2	45	81927.5	0.0000	55.7600	ppb	1.29	50000.00	
40 Ca	# 1	45	465421.9	0.0000	54.4400	ppb	1.31	50000.00	
47 Ti	# 3	45	971.2	0.0000	0.5303	ppb	1.39	500.00	
51 V	# 2	45	5470.4	0.0000	0.5056	ppb	1.32	500.00	
52 Cr	# 2	45	3758.1	0.0000	0.5181	ppb	2.26	500.00	
55 Mn	# 3	45	19718.4	0.0000	0.5806	ppb	2.74	3000.00	
56 Fe	# 1	45	689831.0	0.0000	59.8100	ppb	0.94	50000.00	
59 Co	# 3	45	12336.8	0.0000	0.5429	ppb	1.89	500.00	
60 Ni	# 2	45	1299.4	0.0000	0.5591	ppb	2.50	500.00	
63 Cu	# 2	45	3023.4	0.0000	0.5537	ppb	1.30	500.00	
66 Zn	# 3	72	14861.5	0.0000	4.4070	ppb	1.25	500.00	
75 As	# 2	72	493.6	0.0000	0.5342	ppb	2.09	500.00	
78 Se	# 1	72	239.3	0.0000	0.5436	ppb	4.71	500.00	
88 Sr	# 3	72	17439.0	0.0000	0.5257	ppb	3.08	500.00	
90 Zr	# 3	72	652.3	0.0000	0.0061	ppb	35.39	50.00	
95 Mo	# 3	115	3400.5	0.0000	0.5412	ppb	2.87	500.00	
107 Ag	# 3	115	1384.6	0.0000	0.0772	ppb	3.93	50.00	
111 Cd	# 3	115	1876.7	0.0000	0.5047	ppb	3.80	500.00	
118 Sn	# 3	115	5752.5	0.0000	0.5226	ppb	5.03	500.00	
121 Sb	# 3	115	7266.6	0.0000	0.4977	ppb	1.79	500.00	
137 Ba	# 3	115	2792.6	0.0000	0.4994	ppb	3.68	1000.00	
182 W	# 3	159	222.2	0.0000	0.0075	ppb	23.39	50.00	
205 Tl	# 3	159	17651.2	0.0000	0.5667	ppb	1.70	500.00	
208 Pb	# 3	159	24722.2	0.0000	0.5629	ppb	0.48	500.00	
235 U	# 3	159	181.1	0.0000	0.0042	ppb	18.57	30.00	
238 U	# 3	159	26360.9	0.0000	0.5500	ppb	1.48	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1616054.60	1.26	1679596.50	96.2	60 - 125	
45 Sc # 1	1349667.00	1.37	1396933.60	96.6	60 - 125	
45 Sc # 2	298004.91	0.24	307639.66	96.9	60 - 125	
45 Sc # 3	2594192.50	0.77	2728522.00	95.1	60 - 125	
72 Ge # 1	324561.63	0.38	339885.25	95.5	60 - 125	
72 Ge # 2	143054.69	0.87	148814.88	96.1	60 - 125	
72 Ge # 3	529476.13	0.50	555501.63	95.3	60 - 125	
115 In # 3	4035175.80	1.40	4115787.00	98.0	60 - 125	
159 Tb # 3	6057647.00	0.68	6212593.00	97.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02013.D\F6B02013.D#
Date Acquired:	Feb 2 2016 12:46 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.46	ppb	83266.4	11.96	---	
9 Be	0.01	ppb	97.8	26.33	---	
11 B	0.34	ppb	3546.1	8.56	---	
23 Na	97720.00	ppb	365203710.0	0.73	120000.00	
24 Mg	91590.00	ppb	1045724000.0	1.01	120000.00	
27 Al	94720.00	ppb	1387362900.0	0.90	120000.00	
28 Si	5.66	ppb	7139.8	4.03	---	
31 P	102300.00	ppb	70916040.0	0.62	---	
39 K	100200.00	ppb	70979168.0	0.77	120000.00	
40 Ca	97990.00	ppb	697078080.0	1.01	120000.00	
47 Ti	2154.00	ppb	3106915.0	0.38	2400.00	
51 V	0.10	ppb	3017.0	6.32	---	
52 Cr	1.29	ppb	7934.0	1.02	---	
55 Mn	0.34	ppb	11321.5	2.47	---	
56 Fe	95850.00	ppb	963261180.0	1.16	120000.00	
59 Co	0.26	ppb	5395.7	2.25	---	
60 Ni	0.22	ppb	547.3	8.03	---	
63 Cu	0.63	ppb	3141.9	1.96	---	
66 Zn	2.33	ppb	7554.5	1.02	---	
75 As	0.21	ppb	212.2	6.19	---	
78 Se	0.06	ppb	26.9	23.17	---	
88 Sr	0.63	ppb	19025.5	2.17	---	
90 Zr	0.74	ppb	17029.6	1.32	---	
95 Mo	2056.00	ppb	9934766.0	0.51	2400.00	
107 Ag	0.02	ppb	315.6	5.50	---	
111 Cd	0.27	ppb	790.4	39.80	---	
118 Sn	0.08	ppb	785.6	9.46	---	
121 Sb	0.04	ppb	894.5	10.57	---	
137 Ba	0.10	ppb	504.5	5.10	---	
182 W	0.12	ppb	1617.9	4.75	---	
205 Tl	0.00	ppb	248.9	34.74	---	
208 Pb	0.20	ppb	7995.7	1.59	---	
235 U	0.00	ppb	3.3	1561.40	---	
238 U	0.01	ppb	252.2	11.44	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1183255.3	1.56	1679596.50	70.4	60 - 125	
45 Sc	1193341.0	2.02	1396933.60	85.4	60 - 125	
45 Sc	272926.2	0.86	307639.66	88.7	60 - 125	
45 Sc	2244521.8	0.08	2728522.00	82.3	60 - 125	
72 Ge	272382.5	1.56	339885.25	80.1	60 - 125	
72 Ge	129057.2	1.04	148814.88	86.7	60 - 125	
72 Ge	483272.2	0.32	555501.63	87.0	60 - 125	
115 In	3156469.0	0.43	4115787.00	76.7	60 - 125	
159 Tb	5078256.0	0.98	6212593.00	81.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02014.D\F6B02014.D#
Date Acquired:	Feb 2 2016 12:50 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	19.56	ppb	315161.7	2.10	20.00	80 - 120	
9 Be	20.47	ppb	83716.4	1.29	20.00	80 - 120	
11 B	18.94	ppb	63861.3	2.71	20.00	80 - 120	
23 Na	96100.00	ppb	363061310.0	1.28	100000.00	80 - 120	
24 Mg	89980.00	ppb	1041635000.0	0.89	100000.00	80 - 120	
27 Al	91290.00	ppb	1355648000.0	0.91	100000.00	80 - 120	
28 Si	218.20	ppb	235712.1	0.92	200.00	80 - 120	
31 P	100900.00	ppb	70894568.0	0.29	100000.00	80 - 120	
39 K	101100.00	ppb	71723672.0	1.49	100000.00	80 - 120	
40 Ca	98760.00	ppb	710458500.0	0.43	100000.00	80 - 120	
47 Ti	2157.00	ppb	3154711.0	0.51	2000.00	80 - 120	
51 V	20.22	ppb	101539.6	0.56	20.00	80 - 120	
52 Cr	20.74	ppb	120997.2	0.60	20.00	80 - 120	
55 Mn	20.57	ppb	498111.3	0.27	20.00	80 - 120	
56 Fe	97460.00	ppb	990259520.0	0.77	100000.00	80 - 120	
59 Co	19.53	ppb	373604.0	0.78	20.00	80 - 120	
60 Ni	19.06	ppb	36260.2	1.36	20.00	80 - 120	
63 Cu	19.00	ppb	90713.0	0.69	20.00	80 - 120	
66 Zn	20.18	ppb	58989.7	0.64	20.00	80 - 120	
75 As	20.69	ppb	14946.0	1.35	20.00	80 - 120	
78 Se	21.40	ppb	7970.0	1.39	20.00	80 - 120	
88 Sr	19.70	ppb	579761.0	0.07	20.00	80 - 120	
90 Zr	8.51	ppb	189914.1	0.85	20.00	80 - 120	Fail
95 Mo	2069.00	ppb	10254030.0	0.37	2000.00	80 - 120	
107 Ag	17.52	ppb	242823.1	0.72	20.00	80 - 120	
111 Cd	19.48	ppb	57726.1	0.76	20.00	80 - 120	
118 Sn	19.08	ppb	164423.0	0.50	20.00	80 - 120	
121 Sb	19.98	ppb	212854.8	0.62	20.00	80 - 120	
137 Ba	20.42	ppb	88241.5	0.08	20.00	80 - 120	
182 W	20.13	ppb	254677.8	0.63	20.00	80 - 120	
205 Tl	19.79	ppb	518772.8	0.61	20.00	80 - 120	
208 Pb	19.66	ppb	707322.1	0.95	20.00	80 - 120	
235 U	0.17	ppb	5980.5	0.70	0.14	80 - 120	
238 U	20.34	ppb	825831.6	0.64	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1138128.8	1.45	1679596.50	67.8	60 - 125	
45 Sc	1206522.4	1.74	1396933.60	86.4	60 - 125	
45 Sc	273553.8	0.95	307639.66	88.9	60 - 125	
45 Sc	2275730.5	0.41	2728522.00	83.4	60 - 125	
72 Ge	279159.4	0.97	339885.25	82.1	60 - 125	
72 Ge	129561.0	0.89	148814.88	87.1	60 - 125	
72 Ge	481175.2	0.31	555501.63	86.6	60 - 125	
115 In	3237956.0	0.22	4115787.00	78.7	60 - 125	
159 Tb	5140397.0	0.59	6212593.00	82.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02016.D\F6B02016.D#
Date Acquired: Feb 2 2016 12:59 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.07 ppb	2.81	25.00	90 - 110	
9 Be	26.39 ppb	3.40	25.00	90 - 110	
11 B	26.67 ppb	4.89	25.00	90 - 110	
23 Na	23580.00 ppb	0.40	25000.00	90 - 110	
24 Mg	22890.00 ppb	2.82	25000.00	90 - 110	
27 Al	23560.00 ppb	1.70	25000.00	90 - 110	
28 Si	2487.00 ppb	0.94	2500.00	90 - 110	
31 P	244.40 ppb	1.33	250.00	90 - 110	
39 K	25620.00 ppb	1.21	25000.00	90 - 110	
40 Ca	24510.00 ppb	1.09	25000.00	90 - 110	
47 Ti	250.90 ppb	1.57	250.00	90 - 110	
51 V	244.70 ppb	1.64	250.00	90 - 110	
52 Cr	247.10 ppb	1.25	250.00	90 - 110	
55 Mn	1486.00 ppb	2.76	1500.00	90 - 110	
56 Fe	25050.00 ppb	0.51	25000.00	90 - 110	
59 Co	233.30 ppb	4.08	250.00	90 - 110	
60 Ni	246.70 ppb	0.85	250.00	90 - 110	
63 Cu	240.00 ppb	0.60	250.00	90 - 110	
66 Zn	243.70 ppb	0.88	250.00	90 - 110	
75 As	253.00 ppb	0.87	250.00	90 - 110	
78 Se	249.80 ppb	0.19	250.00	90 - 110	
88 Sr	247.60 ppb	1.70	250.00	90 - 110	
90 Zr	20.73 ppb	3.71	25.00	90 - 110	Fail
95 Mo	253.80 ppb	2.19	250.00	90 - 110	
107 Ag	24.14 ppb	4.23	25.00	90 - 110	
111 Cd	247.00 ppb	1.41	250.00	90 - 110	
118 Sn	243.60 ppb	0.73	250.00	90 - 110	
121 Sb	247.60 ppb	1.40	250.00	90 - 110	
137 Ba	500.60 ppb	2.43	500.00	90 - 110	
182 W	25.26 ppb	1.33	25.00	90 - 110	
205 Tl	243.90 ppb	1.27	250.00	90 - 110	
208 Pb	239.50 ppb	1.40	250.00	90 - 110	
235 U	1.69 ppb	2.74	1.80	90 - 110	
238 U	243.70 ppb	3.57	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1240932.00	3.06	1679596.50	73.9	60 - 125	
45 Sc	1267685.10	1.05	1396933.60	90.7	60 - 125	
45 Sc	291382.94	0.62	307639.66	94.7	60 - 125	
45 Sc	2516397.80	1.96	2728522.00	92.2	60 - 125	
72 Ge	299870.63	0.49	339885.25	88.2	60 - 125	
72 Ge	138944.34	1.12	148814.88	93.4	60 - 125	
72 Ge	516836.34	1.17	555501.63	93.0	60 - 125	
115 In	3771020.80	2.15	4115787.00	91.6	60 - 125	
159 Tb	5951222.00	1.44	6212593.00	95.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02017.D\F6B02017.D#
Date Acquired: Feb 2 2016 01:03 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB1
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1135	ppb	89213.4	132.51	0.20	
9 Be	-0.0012	ppb	58.9	177.07	0.10	
11 B	-0.0055	ppb	2684.8	64.24	5.00	
23 Na	-23.2700	ppb	102760.8	2.60	40.00	
24 Mg	1.2820	ppb	28415.0	19.44	10.00	
27 Al	1.4070	ppb	28530.9	15.22	20.00	
28 Si	0.5799	ppb	1936.9	19.45	20.00	
31 P	-6.5600	ppb	17607.1	5.20	10.00	
39 K	0.8816	ppb	40253.5	18.48	20.00	
40 Ca	4.6270	ppb	63748.9	5.67	25.00	
47 Ti	0.0501	ppb	171.1	27.95	0.50	
51 V	-0.0255	ppb	2685.8	24.73	0.50	
52 Cr	0.0089	ppb	542.7	38.01	0.20	
55 Mn	0.0740	ppb	5845.8	19.28	0.20	
56 Fe	8.4470	ppb	104506.6	7.46	10.00	
59 Co	0.0085	ppb	698.9	14.12	0.20	
60 Ni	0.0512	ppb	255.3	13.85	0.20	
63 Cu	0.0390	ppb	356.7	7.82	0.40	
66 Zn	0.0130	ppb	952.3	133.23	2.00	
75 As	0.0295	ppb	96.2	50.02	0.20	
78 Se	0.0608	ppb	31.3	8.23	0.20	
88 Sr	0.0146	ppb	930.1	4.84	0.20	
90 Zr	-0.0089	ppb	293.3	20.44	2.00	
95 Mo	0.3551	ppb	2361.4	6.35	0.40	
107 Ag	0.0008	ppb	67.8	99.68	0.20	
111 Cd	0.0165	ppb	78.8	13.69	0.20	
118 Sn	0.0806	ppb	1055.6	12.70	0.20	
121 Sb	0.1040	ppb	2153.6	15.95	0.40	
137 Ba	0.0260	ppb	257.8	20.60	0.20	
182 W	0.0218	ppb	458.9	29.02	1.00	
205 Tl	0.0257	ppb	991.2	15.75	0.20	
208 Pb	0.0095	ppb	1355.6	43.78	0.10	
235 U	0.0001	ppb	10.0	157.80	1.00	
238 U	0.0333	ppb	1725.7	18.60	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1339754.4	2.24	1679596.50	79.8	60 - 125	
45 Sc	1331735.8	1.89	1396933.60	95.3	60 - 125	
45 Sc	303520.9	0.52	307639.66	98.7	60 - 125	
45 Sc	2602736.8	1.32	2728522.00	95.4	60 - 125	
72 Ge	335200.7	0.52	339885.25	98.6	60 - 125	
72 Ge	148540.6	0.22	148814.88	99.8	60 - 125	
72 Ge	546225.6	0.68	555501.63	98.3	60 - 125	
115 In	4231127.0	0.23	4115787.00	102.8	60 - 125	
159 Tb	6378545.5	0.47	6212593.00	102.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02075.D\F6B02075.D#
Date Acquired: Feb 2 2016 06:02 pm
Operator: CCapul
Sample Name: CCV7
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.02 ppb	1.12	25.00	90 - 110	
9 Be	25.02 ppb	3.13	25.00	90 - 110	
11 B	24.56 ppb	6.72	25.00	90 - 110	
23 Na	25490.00 ppb	0.51	25000.00	90 - 110	
24 Mg	25250.00 ppb	4.34	25000.00	90 - 110	
27 Al	25680.00 ppb	3.05	25000.00	90 - 110	
28 Si	2763.00 ppb	0.36	2500.00	90 - 110	Fail
31 P	270.50 ppb	1.23	250.00	90 - 110	
39 K	26610.00 ppb	1.72	25000.00	90 - 110	
40 Ca	25300.00 ppb	0.77	25000.00	90 - 110	
47 Ti	253.40 ppb	1.03	250.00	90 - 110	
51 V	238.70 ppb	1.26	250.00	90 - 110	
52 Cr	238.10 ppb	1.23	250.00	90 - 110	
55 Mn	1472.00 ppb	1.28	1500.00	90 - 110	
56 Fe	24410.00 ppb	0.28	25000.00	90 - 110	
59 Co	239.60 ppb	0.97	250.00	90 - 110	
60 Ni	231.10 ppb	0.65	250.00	90 - 110	
63 Cu	236.40 ppb	1.21	250.00	90 - 110	
66 Zn	243.20 ppb	1.97	250.00	90 - 110	
75 As	254.10 ppb	0.35	250.00	90 - 110	
78 Se	248.10 ppb	0.42	250.00	90 - 110	
88 Sr	246.10 ppb	0.49	250.00	90 - 110	
90 Zr	20.29 ppb	2.35	25.00	90 - 110	Fail
95 Mo	256.30 ppb	1.18	250.00	90 - 110	
107 Ag	24.11 ppb	1.64	25.00	90 - 110	
111 Cd	247.10 ppb	0.98	250.00	90 - 110	
118 Sn	242.10 ppb	0.61	250.00	90 - 110	
121 Sb	247.70 ppb	0.92	250.00	90 - 110	
137 Ba	494.00 ppb	1.88	500.00	90 - 110	
182 W	25.32 ppb	0.68	25.00	90 - 110	
205 Tl	246.70 ppb	1.60	250.00	90 - 110	
208 Pb	246.30 ppb	2.97	250.00	90 - 110	
235 U	1.73 ppb	2.40	1.80	90 - 110	
238 U	247.00 ppb	1.33	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1358583.60	4.06	1679596.50	80.9	60 - 125	
45 Sc	1170804.60	0.70	1396933.60	83.8	60 - 125	
45 Sc	263435.78	0.67	307639.66	85.6	60 - 125	
45 Sc	2307753.00	0.22	2728522.00	84.6	60 - 125	
72 Ge	267005.69	0.47	339885.25	78.6	60 - 125	
72 Ge	120436.91	0.42	148814.88	80.9	60 - 125	
72 Ge	458357.38	2.07	555501.63	82.5	60 - 125	
115 In	3206293.50	0.97	4115787.00	77.9	60 - 125	
159 Tb	4861696.00	1.15	6212593.00	78.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02076.D\F6B02076.D#
Date Acquired: Feb 2 2016 06:05 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB7
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0028	ppb	98782.5	436.31	0.20	
9 Be	-0.0034	ppb	54.4	134.40	0.10	
11 B	-0.2208	ppb	2099.1	7.26	5.00	
23 Na	-26.7400	ppb	79922.9	1.91	40.00	
24 Mg	1.6370	ppb	30326.2	11.51	10.00	
27 Al	1.2340	ppb	23437.2	17.63	20.00	
28 Si	0.8537	ppb	2048.0	9.55	20.00	
31 P	-0.9091	ppb	20279.3	77.26	10.00	
39 K	9.7630	ppb	41867.1	7.25	20.00	
40 Ca	5.4950	ppb	63958.1	2.34	25.00	
47 Ti	0.0194	ppb	110.0	48.35	0.50	
51 V	0.0581	ppb	2782.7	21.70	0.50	
52 Cr	0.0259	ppb	578.0	6.09	0.20	
55 Mn	0.0668	ppb	5171.1	32.12	0.20	
56 Fe	7.6990	ppb	87049.9	6.74	10.00	
59 Co	0.0078	ppb	626.7	46.38	0.20	
60 Ni	0.1033	ppb	323.3	9.43	0.20	
63 Cu	0.0251	ppb	250.7	15.84	0.40	
66 Zn	0.0304	ppb	888.9	102.14	2.00	
75 As	0.0627	ppb	106.0	21.41	0.20	
78 Se	0.0589	ppb	26.0	19.07	0.20	
88 Sr	0.0137	ppb	792.3	27.25	0.20	
90 Zr	-0.0071	ppb	297.8	17.70	2.00	
95 Mo	0.1538	ppb	887.8	15.91	0.40	
107 Ag	0.0019	ppb	73.3	60.64	0.20	
111 Cd	0.0123	ppb	52.4	36.34	0.20	
118 Sn	0.0830	ppb	907.8	5.28	0.20	
121 Sb	0.0434	ppb	1101.2	15.80	0.40	
137 Ba	0.0235	ppb	204.5	38.19	0.20	
182 W	0.0338	ppb	524.5	8.70	1.00	
205 Tl	0.0344	ppb	1033.4	10.07	0.20	
208 Pb	0.0062	ppb	982.3	13.64	0.10	
235 U	0.0002	ppb	12.2	44.83	1.00	
238 U	0.0330	ppb	1386.8	12.15	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1511500.9	1.36	1679596.50	90.0	60 - 125	
45 Sc	1205393.9	0.68	1396933.60	86.3	60 - 125	
45 Sc	268964.9	0.77	307639.66	87.4	60 - 125	
45 Sc	2383382.5	1.04	2728522.00	87.4	60 - 125	
72 Ge	286328.3	0.79	339885.25	84.2	60 - 125	
72 Ge	127363.2	0.40	148814.88	85.6	60 - 125	
72 Ge	481345.1	0.87	555501.63	86.7	60 - 125	
115 In	3548404.5	0.94	4115787.00	86.2	60 - 125	
159 Tb	5179029.5	0.35	6212593.00	83.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02078.D\F6B02078.D#
Date Acquired: Feb 2 2016 06:14 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: IMB003SB
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: MBS
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0487	ppb	104561.0	218.50	0.50	
9 Be	-0.0057	ppb	44.4	29.75	0.50	
11 B	-0.0535	ppb	2960.4	56.49	10.00	
23 Na	46.3100	ppb	355516.6	0.48	100.00	
24 Mg	7.1530	ppb	101729.5	0.76	100.00	
27 Al	2.8930	ppb	51549.2	1.44	100.00	
28 Si	1.6450	ppb	2897.1	6.48	50.00	
31 P	10.9800	ppb	30377.9	5.85	10.00	Fail
39 K	9.0730	ppb	42669.4	6.79	100.00	
40 Ca	237.3000	ppb	1730004.0	1.05	100.00	Fail
47 Ti	0.0620	ppb	183.3	20.77	0.50	
51 V	-0.1078	ppb	2045.3	2.43	0.50	
52 Cr	0.0373	ppb	663.4	1.39	0.50	
55 Mn	0.1140	ppb	6656.2	5.37	0.50	
56 Fe	2.2050	ppb	31296.5	3.05	100.00	
59 Co	0.0026	ppb	547.8	78.57	0.50	
60 Ni	0.1659	ppb	453.6	9.13	0.50	
63 Cu	0.2928	ppb	1552.8	3.00	0.50	
66 Zn	1.0770	ppb	3986.2	1.99	2.00	
75 As	-0.0088	ppb	56.4	124.74	0.50	
78 Se	0.0066	ppb	6.0	55.10	0.50	
88 Sr	0.5574	ppb	17123.0	0.26	0.50	Fail
90 Zr	-0.0068	ppb	311.1	4.67	5.00	
95 Mo	0.0206	ppb	167.8	27.56	0.50	
107 Ag	-0.0001	ppb	44.4	1453.90	0.50	
111 Cd	0.0005	ppb	14.4	390.76	0.50	
118 Sn	3.1010	ppb	30201.1	0.21	20.00	
121 Sb	-0.0051	ppb	550.0	87.55	0.50	
137 Ba	0.0881	ppb	524.5	9.28	0.50	
182 W	0.0444	ppb	681.2	8.05	2.00	
205 Tl	0.0011	ppb	157.8	91.70	0.50	
208 Pb	0.0503	ppb	2654.7	4.41	0.50	
235 U	0.0001	ppb	8.9	162.51	---	
238 U	0.0033	ppb	177.8	20.03	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1586641.0	1.42	1679596.50	94.5	60 - 125	
45 Sc	1205266.3	0.98	1396933.60	86.3	60 - 125	
45 Sc	277330.7	0.60	307639.66	90.1	60 - 125	
45 Sc	2494057.5	1.13	2728522.00	91.4	60 - 125	
72 Ge	284530.1	0.81	339885.25	83.7	60 - 125	
72 Ge	129800.4	0.70	148814.88	87.2	60 - 125	
72 Ge	491056.1	0.46	555501.63	88.4	60 - 125	
115 In	3646075.8	1.13	4115787.00	88.6	60 - 125	
159 Tb	5337237.0	0.68	6212593.00	85.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02079.D\F6B02079.D#
Date Acquired:	Feb 2 2016 06:18 pm
Operator:	CCapul
Sample Name:	IMB003SL
Misc Info:	
Vial Number:	2407
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	LCSS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	734288.63	38.04	ppb	0.27	40.00	80 - 120	
9 Be	196355.30	35.49	ppb	1.91	40.00	80 - 120	
11 B	153173.00	34.10	ppb	1.59	40.00	80 - 120	
23 Na	15813100.00	4162.00	ppb	1.12	4000.00	80 - 120	
24 Mg	49504848.00	4003.00	ppb	2.60	4000.00	80 - 120	
27 Al	63609260.00	4010.00	ppb	2.22	4000.00	80 - 120	
28 Si	3882.87	2.58	ppb	6.16	4000.00	80 - 120	Fail
31 P	30734.95	12.48	ppb	3.86	400.00	80 - 120	Fail
39 K	3077079.00	4289.00	ppb	1.76	4000.00	80 - 120	
40 Ca	30868910.00	4312.00	ppb	0.82	4000.00	80 - 120	
47 Ti	61932.58	39.60	ppb	1.43	40.00	80 - 120	
51 V	190808.59	38.45	ppb	0.42	40.00	80 - 120	
52 Cr	223086.80	38.30	ppb	0.54	40.00	80 - 120	
55 Mn	1036569.00	40.21	ppb	2.10	40.00	80 - 120	
56 Fe	40715200.00	4028.00	ppb	1.39	4000.00	80 - 120	
59 Co	789343.13	38.66	ppb	2.16	40.00	80 - 120	
60 Ni	73661.11	38.80	ppb	0.35	40.00	80 - 120	
63 Cu	183025.59	38.36	ppb	0.56	40.00	80 - 120	
66 Zn	229599.59	80.52	ppb	0.57	80.00	80 - 120	
75 As	27107.57	38.81	ppb	0.65	40.00	80 - 120	
78 Se	14094.05	37.57	ppb	0.69	40.00	80 - 120	
88 Sr	1208966.00	41.70	ppb	1.02	40.00	80 - 120	
90 Zr	6352.74	0.27	ppb	1.68	30.00	80 - 120	Fail
95 Mo	205392.70	38.13	ppb	0.31	40.00	80 - 120	
107 Ag	547323.31	36.35	ppb	0.63	40.00	80 - 120	
111 Cd	122403.60	38.02	ppb	0.43	40.00	80 - 120	
118 Sn	375501.31	40.10	ppb	0.28	40.00	80 - 120	
121 Sb	427139.31	36.94	ppb	0.08	40.00	80 - 120	
137 Ba	178374.00	37.99	ppb	0.71	40.00	80 - 120	
182 W	778.94	0.05	ppb	2.58	40.00	80 - 120	Fail
205 Tl	1074393.00	40.99	ppb	0.38	40.00	80 - 120	
208 Pb	1506248.00	41.91	ppb	0.35	40.00	80 - 120	
235 U	12371.88	0.34	ppb	0.38	0.28	80 - 120	Fail
238 U	1677643.00	41.32	ppb	0.33	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1540429.60	2.03	1679596.50	91.7	60 - 125	
45 Sc	1200049.50	2.01	1396933.60	85.9	60 - 125	
45 Sc	273493.56	0.56	307639.66	88.9	60 - 125	
45 Sc	2431085.80	1.65	2728522.00	89.1	60 - 125	
72 Ge	281175.97	0.45	339885.25	82.7	60 - 125	
72 Ge	125507.23	0.65	148814.88	84.3	60 - 125	
72 Ge	474266.88	0.37	555501.63	85.4	60 - 125	
115 In	3518784.00	0.45	4115787.00	85.5	60 - 125	
159 Tb	5139407.00	0.35	6212593.00	82.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02080.D\F6B02080.D#
Date Acquired:	Feb 2 2016 06:23 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B005-01M
Misc Info:	
Vial Number:	2408
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	1199773.0	0.0000	64.4100	ppb	1.68	50.00	>LRS
9 Be	# 3	6	205342.5	0.0000	36.3000	ppb	0.17	50.00	
11 B	# 3	6	183819.5	0.0000	40.1500	ppb	0.28	50.00	
23 Na	# 1	45	15290300.0	0.0000	3752.0000	ppb	0.99	50000.00	
24 Mg	# 3	45	121322100.0	0.0000	9318.0000	ppb	0.95	50000.00	
27 Al	# 3	45	752767490.0	0.0000	45080.0000	ppb	1.56	50000.00	
28 Si	# 1	45	2567281.0	0.0000	2240.0000	ppb	1.13	5000.00	
31 P	# 3	45	272171.2	0.0000	316.1000	ppb	1.50	500.00	
39 K	# 2	45	8275107.0	0.0000	11120.0000	ppb	0.75	50000.00	
40 Ca	# 1	45	68002608.0	0.0000	8870.0000	ppb	1.96	50000.00	
47 Ti	# 3	45	758655.6	0.0000	461.3000	ppb	1.17	500.00	
51 V	# 2	45	461259.1	0.0000	89.6800	ppb	0.78	500.00	
52 Cr	# 2	45	399352.9	0.0000	65.7000	ppb	0.88	500.00	
55 Mn	# 3	45	14572690.0	0.0000	538.6000	ppb	1.10	3000.00	
56 Fe	# 1	45	359244100.0	0.0000	33180.0000	ppb	1.46	50000.00	
59 Co	# 3	45	942049.7	0.0000	43.8300	ppb	3.07	500.00	
60 Ni	# 2	45	113538.7	0.0000	57.2900	ppb	0.71	500.00	
63 Cu	# 2	45	245927.6	0.0000	49.3600	ppb	1.03	500.00	
66 Zn	# 3	72	421969.8	0.0000	147.8000	ppb	0.38	500.00	
75 As	# 2	72	31323.8	0.0000	45.0800	ppb	0.36	500.00	
78 Se	# 1	72	13346.7	0.0000	36.1600	ppb	0.69	500.00	
88 Sr	# 3	72	2546095.0	0.0000	87.5700	ppb	0.80	500.00	
90 Zr	# 3	72	211146.1	0.0000	9.5770	ppb	0.73	50.00	
95 Mo	# 3	115	192117.6	0.0000	38.1900	ppb	1.10	500.00	
107 Ag	# 3	115	503209.2	0.0000	35.7800	ppb	0.61	50.00	
111 Cd	# 3	115	115599.1	0.0000	38.4500	ppb	1.34	500.00	
118 Sn	# 3	115	357722.4	0.0000	40.9000	ppb	0.77	500.00	
121 Sb	# 3	115	327942.5	0.0000	30.3600	ppb	0.41	500.00	
137 Ba	# 3	115	1043734.0	0.0000	238.1000	ppb	1.61	1000.00	
182 W	# 3	159	2071.4	0.0000	0.1627	ppb	1.27	50.00	
205 Tl	# 3	159	974071.5	0.0000	38.5900	ppb	2.41	500.00	
208 Pb	# 3	159	2020751.0	0.0000	58.3900	ppb	0.79	500.00	
235 U	# 3	159	11749.1	0.0000	0.3374	ppb	1.98	30.00	
238 U	# 3	159	1573692.0	0.0000	40.2500	ppb	1.25	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1574450.80	1.30	1679596.50	93.7	60 - 125	
45 Sc # 1	1285715.00	1.89	1396933.60	92.0	60 - 125	
45 Sc # 2	285670.78	0.68	307639.66	92.9	60 - 125	
45 Sc # 3	2559472.80	1.74	2728522.00	93.8	60 - 125	
72 Ge # 1	276684.50	0.20	339885.25	81.4	60 - 125	
72 Ge # 2	124882.64	0.44	148814.88	83.9	60 - 125	
72 Ge # 3	475676.59	0.81	555501.63	85.6	60 - 125	
115 In # 3	3286534.80	1.19	4115787.00	79.9	60 - 125	
159 Tb # 3	4949485.50	0.69	6212593.00	79.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02081.D\F6B02081.D#
Date Acquired: Feb 2 2016 06:27 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B005-01A
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	1195692.0	0.0000	61.2900	ppb	0.92	50.00	>LRS
9 Be	# 3	6	219611.6	0.0000	37.2200	ppb	1.31	50.00	
11 B	# 3	6	197199.4	0.0000	41.3200	ppb	1.74	50.00	
23 Na	# 1	45	17415460.0	0.0000	4258.0000	ppb	0.87	50000.00	
24 Mg	# 3	45	122403800.0	0.0000	9162.0000	ppb	1.06	50000.00	
27 Al	# 3	45	657092420.0	0.0000	38340.0000	ppb	0.63	50000.00	
28 Si	# 1	45	2384679.0	0.0000	2070.0000	ppb	0.48	5000.00	
31 P	# 3	45	265301.7	0.0000	298.8000	ppb	0.33	500.00	
39 K	# 2	45	8243372.0	0.0000	11020.0000	ppb	0.94	50000.00	
40 Ca	# 1	45	72589448.0	0.0000	9419.0000	ppb	0.86	50000.00	
47 Ti	# 3	45	631559.9	0.0000	374.3000	ppb	0.68	500.00	
51 V	# 2	45	458910.9	0.0000	88.7200	ppb	0.12	500.00	
52 Cr	# 2	45	398236.1	0.0000	65.1500	ppb	0.30	500.00	
55 Mn	# 3	45	14817340.0	0.0000	533.7000	ppb	0.28	3000.00	
56 Fe	# 1	45	349949790.0	0.0000	32160.0000	ppb	0.24	50000.00	
59 Co	# 3	45	995636.3	0.0000	45.1400	ppb	0.64	500.00	
60 Ni	# 2	45	115530.4	0.0000	57.9700	ppb	0.29	500.00	
63 Cu	# 2	45	252870.2	0.0000	50.4700	ppb	0.25	500.00	
66 Zn	# 3	72	414161.6	0.0000	143.7000	ppb	0.52	500.00	
75 As	# 2	72	33163.0	0.0000	47.4800	ppb	1.09	500.00	
78 Se	# 1	72	14443.1	0.0000	38.7200	ppb	0.60	500.00	
88 Sr	# 3	72	2569053.0	0.0000	87.5800	ppb	0.44	500.00	
90 Zr	# 3	72	166011.5	0.0000	7.4580	ppb	0.69	50.00	
95 Mo	# 3	115	211216.4	0.0000	41.6300	ppb	1.03	500.00	
107 Ag	# 3	115	522199.6	0.0000	36.8200	ppb	1.51	50.00	
111 Cd	# 3	115	121157.1	0.0000	39.9500	ppb	0.10	500.00	
118 Sn	# 3	115	377456.8	0.0000	42.8000	ppb	1.28	500.00	
121 Sb	# 3	115	427377.3	0.0000	39.2500	ppb	1.51	500.00	
137 Ba	# 3	115	1014691.0	0.0000	229.6000	ppb	2.72	1000.00	
182 W	# 3	159	2074.7	0.0000	0.1625	ppb	6.04	50.00	
205 Tl	# 3	159	1032037.0	0.0000	40.8000	ppb	0.22	500.00	
208 Pb	# 3	159	2088654.0	0.0000	60.2200	ppb	0.63	500.00	
235 U	# 3	159	12404.2	0.0000	0.3555	ppb	1.82	30.00	
238 U	# 3	159	1655813.0	0.0000	42.2600	ppb	0.97	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1642280.50	1.18	1679596.50	97.8	60 - 125	
45 Sc # 1	1292239.00	0.99	1396933.60	92.5	60 - 125	
45 Sc # 2	287250.59	0.30	307639.66	93.4	60 - 125	
45 Sc # 3	2626120.30	0.62	2728522.00	96.2	60 - 125	
72 Ge # 1	279585.88	0.09	339885.25	82.3	60 - 125	
72 Ge # 2	125551.72	0.76	148814.88	84.4	60 - 125	
72 Ge # 3	479970.63	0.69	555501.63	86.4	60 - 125	
115 In # 3	3314368.00	0.81	4115787.00	80.5	60 - 125	
159 Tb # 3	4960115.00	0.80	6212593.00	79.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02082.D\F6B02082.D#
Date Acquired:	Feb 2 2016 06:31 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B005-01
Misc Info:	
Vial Number:	2410
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	499177.8	0.0000	21.5600	ppb	1.14	50.00	
9 Be	# 3	6	8757.3	0.0000	1.4450	ppb	2.18	50.00	
11 B	# 3	6	37973.5	0.0000	7.2420	ppb	0.77	50.00	
23 Na	# 1	45	514226.3	0.0000	78.9500	ppb	0.55	50000.00	
24 Mg	# 3	45	67622416.0	0.0000	5055.0000	ppb	0.55	50000.00	
27 Al	# 3	45	587953980.0	0.0000	34270.0000	ppb	0.06	50000.00	
28 Si	# 1	45	2397609.0	0.0000	2077.0000	ppb	1.30	5000.00	
31 P	# 3	45	264783.6	0.0000	297.8000	ppb	0.37	500.00	
39 K	# 2	45	4968891.0	0.0000	6549.0000	ppb	0.13	50000.00	
40 Ca	# 1	45	41004640.0	0.0000	5308.0000	ppb	1.01	50000.00	
47 Ti	# 3	45	570379.1	0.0000	337.6000	ppb	0.76	500.00	
51 V	# 2	45	267382.8	0.0000	50.9200	ppb	0.54	500.00	
52 Cr	# 2	45	175393.3	0.0000	28.3500	ppb	0.93	500.00	
55 Mn	# 3	45	13934150.0	0.0000	501.2000	ppb	0.20	3000.00	
56 Fe	# 1	45	307089410.0	0.0000	28160.0000	ppb	0.64	50000.00	
59 Co	# 3	45	223859.9	0.0000	10.1200	ppb	0.64	500.00	
60 Ni	# 2	45	43800.7	0.0000	21.7000	ppb	0.84	500.00	
63 Cu	# 2	45	78066.2	0.0000	15.4000	ppb	0.95	500.00	
66 Zn	# 3	72	202536.6	0.0000	69.4900	ppb	0.76	500.00	
75 As	# 2	72	5762.3	0.0000	8.0180	ppb	0.42	500.00	
78 Se	# 1	72	180.7	0.0000	0.4768	ppb	10.70	500.00	
88 Sr	# 3	72	1396554.0	0.0000	47.1500	ppb	1.05	500.00	
90 Zr	# 3	72	163236.5	0.0000	7.2640	ppb	1.24	50.00	
95 Mo	# 3	115	5403.5	0.0000	1.0320	ppb	1.30	500.00	
107 Ag	# 3	115	1786.8	0.0000	0.1203	ppb	5.98	50.00	
111 Cd	# 3	115	1847.7	0.0000	0.5922	ppb	4.20	500.00	
118 Sn	# 3	115	38411.7	0.0000	4.2480	ppb	0.82	500.00	
121 Sb	# 3	115	5633.6	0.0000	0.4555	ppb	1.21	500.00	
137 Ba	# 3	115	866760.1	0.0000	191.8000	ppb	0.58	1000.00	
182 W	# 3	159	2002.4	0.0000	0.1538	ppb	6.54	50.00	
205 Tl	# 3	159	10896.0	0.0000	0.4185	ppb	1.14	500.00	
208 Pb	# 3	159	705120.9	0.0000	19.9600	ppb	0.49	500.00	
235 U	# 3	159	276.7	0.0000	0.0077	ppb	13.70	30.00	
238 U	# 3	159	36980.3	0.0000	0.9264	ppb	0.88	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1671911.40	0.34	1679596.50	99.5	60 - 125	
45 Sc # 1	1294847.10	0.24	1396933.60	92.7	60 - 125	
45 Sc # 2	290360.06	0.45	307639.66	94.4	60 - 125	
45 Sc # 3	2629319.30	0.50	2728522.00	96.4	60 - 125	
72 Ge # 1	278777.75	0.40	339885.25	82.0	60 - 125	
72 Ge # 2	128012.70	0.41	148814.88	86.0	60 - 125	
72 Ge # 3	484514.06	0.42	555501.63	87.2	60 - 125	
115 In # 3	3388343.00	0.70	4115787.00	82.3	60 - 125	
159 Tb # 3	5048648.00	0.17	6212593.00	81.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02083.D\F6B02083.D#
Date Acquired:	Feb 2 2016 06:35 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B005-01J
Misc Info:	
Vial Number:	2411
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	184752.0	0.0000	4.1400	ppb	2.51	50.00	
9 Be	# 3	6	1762.4	0.0000	0.2791	ppb	3.75	50.00	
11 B	# 3	6	9741.3	0.0000	1.3260	ppb	5.49	50.00	
23 Na	# 1	45	144389.1	0.0000	-9.9830	ppb	4.65	50000.00	
24 Mg	# 3	45	13379370.0	0.0000	1061.0000	ppb	1.29	50000.00	
27 Al	# 3	45	116007200.0	0.0000	7174.0000	ppb	1.44	50000.00	
28 Si	# 1	45	490847.0	0.0000	452.2000	ppb	1.68	5000.00	
31 P	# 3	45	69458.9	0.0000	62.3200	ppb	0.76	500.00	
39 K	# 2	45	1039505.0	0.0000	1412.0000	ppb	0.38	50000.00	
40 Ca	# 1	45	8288721.0	0.0000	1140.0000	ppb	0.91	50000.00	
47 Ti	# 3	45	113791.9	0.0000	71.4200	ppb	1.09	500.00	
51 V	# 2	45	55670.1	0.0000	10.8200	ppb	0.36	500.00	
52 Cr	# 2	45	35865.9	0.0000	6.0790	ppb	0.51	500.00	
55 Mn	# 3	45	2865280.0	0.0000	109.3000	ppb	1.73	3000.00	
56 Fe	# 1	45	62293420.0	0.0000	6083.0000	ppb	0.34	50000.00	
59 Co	# 3	45	46312.2	0.0000	2.2030	ppb	2.34	500.00	
60 Ni	# 2	45	9213.4	0.0000	4.7790	ppb	0.63	500.00	
63 Cu	# 2	45	23574.8	0.0000	4.9040	ppb	0.81	500.00	
66 Zn	# 3	72	45623.7	0.0000	15.5400	ppb	1.13	500.00	
75 As	# 2	72	1244.7	0.0000	1.6730	ppb	2.62	500.00	
78 Se	# 1	72	38.7	0.0000	0.0941	ppb	12.85	500.00	
88 Sr	# 3	72	289159.5	0.0000	9.8190	ppb	1.79	500.00	
90 Zr	# 3	72	33003.4	0.0000	1.4620	ppb	0.54	50.00	
95 Mo	# 3	115	1172.3	0.0000	0.2072	ppb	3.93	500.00	
107 Ag	# 3	115	395.6	0.0000	0.0232	ppb	10.12	50.00	
111 Cd	# 3	115	347.5	0.0000	0.1037	ppb	5.88	500.00	
118 Sn	# 3	115	8197.1	0.0000	0.8589	ppb	3.89	500.00	
121 Sb	# 3	115	1564.6	0.0000	0.0839	ppb	16.37	500.00	
137 Ba	# 3	115	177960.0	0.0000	37.7500	ppb	0.25	1000.00	
182 W	# 3	159	584.5	0.0000	0.0391	ppb	10.66	50.00	
205 Tl	# 3	159	2453.7	0.0000	0.0894	ppb	1.24	500.00	
208 Pb	# 3	159	150055.4	0.0000	4.1800	ppb	0.84	500.00	
235 U	# 3	159	58.9	0.0000	0.0015	ppb	22.45	30.00	
238 U	# 3	159	7884.9	0.0000	0.1944	ppb	1.17	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1677284.60	1.03	1679596.50	99.9	60 - 125	
45 Sc # 1	1215684.10	0.81	1396933.60	87.0	60 - 125	
45 Sc # 2	274186.41	0.21	307639.66	89.1	60 - 125	
45 Sc # 3	2478151.50	1.40	2728522.00	90.8	60 - 125	
72 Ge # 1	280505.06	0.66	339885.25	82.5	60 - 125	
72 Ge # 2	127345.98	1.08	148814.88	85.6	60 - 125	
72 Ge # 3	481256.13	0.42	555501.63	86.6	60 - 125	
115 In # 3	3533340.30	0.27	4115787.00	85.8	60 - 125	
159 Tb # 3	5110478.50	0.38	6212593.00	82.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02084.D\F6B02084.D#
Date Acquired: Feb 2 2016 06:40 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B005-01D
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	494641.1	0.0000	21.4000	ppb	0.71	50.00	
9 Be	# 3	6	8707.3	0.0000	1.4420	ppb	1.08	50.00	
11 B	# 3	6	35903.9	0.0000	6.8360	ppb	2.13	50.00	
23 Na	# 1	45	499535.6	0.0000	80.7000	ppb	1.38	50000.00	
24 Mg	# 3	45	67285440.0	0.0000	5033.0000	ppb	0.66	50000.00	
27 Al	# 3	45	584670980.0	0.0000	34100.0000	ppb	0.96	50000.00	
28 Si	# 1	45	1917891.0	0.0000	1734.0000	ppb	1.44	5000.00	
31 P	# 3	45	281248.8	0.0000	318.3000	ppb	0.67	500.00	
39 K	# 2	45	4843402.0	0.0000	6570.0000	ppb	0.99	50000.00	
40 Ca	# 1	45	40565040.0	0.0000	5481.0000	ppb	0.46	50000.00	
47 Ti	# 3	45	571997.5	0.0000	338.7000	ppb	0.85	500.00	
51 V	# 2	45	269331.3	0.0000	52.8000	ppb	0.41	500.00	
52 Cr	# 2	45	172970.2	0.0000	28.7700	ppb	0.47	500.00	
55 Mn	# 3	45	13962600.0	0.0000	502.6000	ppb	0.88	3000.00	
56 Fe	# 1	45	301091200.0	0.0000	28810.0000	ppb	0.84	50000.00	
59 Co	# 3	45	229803.3	0.0000	10.3900	ppb	0.86	500.00	
60 Ni	# 2	45	43509.8	0.0000	22.1800	ppb	0.78	500.00	
63 Cu	# 2	45	91435.0	0.0000	18.5600	ppb	0.38	500.00	
66 Zn	# 3	72	203329.2	0.0000	69.8000	ppb	0.51	500.00	
75 As	# 2	72	5914.1	0.0000	8.4350	ppb	0.21	500.00	
78 Se	# 1	72	180.0	0.0000	0.4945	ppb	8.83	500.00	
88 Sr	# 3	72	1430694.0	0.0000	48.3300	ppb	0.59	500.00	
90 Zr	# 3	72	158028.1	0.0000	7.0360	ppb	1.32	50.00	
95 Mo	# 3	115	4821.0	0.0000	0.9323	ppb	1.37	500.00	
107 Ag	# 3	115	2084.7	0.0000	0.1426	ppb	8.37	50.00	
111 Cd	# 3	115	1894.3	0.0000	0.6153	ppb	1.68	500.00	
118 Sn	# 3	115	37388.7	0.0000	4.1890	ppb	1.78	500.00	
121 Sb	# 3	115	5569.1	0.0000	0.4564	ppb	5.29	500.00	
137 Ba	# 3	115	885898.8	0.0000	198.6000	ppb	1.03	1000.00	
182 W	# 3	159	2003.6	0.0000	0.1556	ppb	2.70	50.00	
205 Tl	# 3	159	10792.6	0.0000	0.4189	ppb	1.04	500.00	
208 Pb	# 3	159	724724.2	0.0000	20.7300	ppb	0.45	500.00	
235 U	# 3	159	281.1	0.0000	0.0079	ppb	12.64	30.00	
238 U	# 3	159	39016.1	0.0000	0.9877	ppb	0.35	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1666355.80	1.73	1679596.50	99.2	60 - 125	
45 Sc # 1	1240735.80	1.10	1396933.60	88.8	60 - 125	
45 Sc # 2	282154.31	0.58	307639.66	91.7	60 - 125	
45 Sc # 3	2627690.50	0.45	2728522.00	96.3	60 - 125	
72 Ge # 1	267938.13	0.80	339885.25	78.8	60 - 125	
72 Ge # 2	124964.38	0.70	148814.88	84.0	60 - 125	
72 Ge # 3	484247.59	1.01	555501.63	87.2	60 - 125	
115 In # 3	3344720.30	1.09	4115787.00	81.3	60 - 125	
159 Tb # 3	4996105.00	0.35	6212593.00	80.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02085.D\F6B02085.D#
Date Acquired: Feb 2 2016 06:44 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B005-02
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	256369.0	0.0000	11.2600	ppb	1.87	50.00	
9 Be	# 3	6	2721.5	0.0000	0.5397	ppb	2.51	50.00	
11 B	# 3	6	26396.2	0.0000	6.0380	ppb	1.91	50.00	
23 Na	# 1	45	880852.3	0.0000	194.2000	ppb	1.25	50000.00	
24 Mg	# 3	45	70436920.0	0.0000	6034.0000	ppb	1.00	50000.00	
27 Al	# 3	45	193936300.0	0.0000	12950.0000	ppb	1.24	50000.00	
28 Si	# 1	45	1386057.0	0.0000	1337.0000	ppb	2.76	5000.00	
31 P	# 3	45	319646.9	0.0000	422.8000	ppb	1.55	500.00	
39 K	# 2	45	1585519.0	0.0000	2263.0000	ppb	0.22	50000.00	
40 Ca	# 1	45	2740810000.0	0.0000	395400.0000	ppb	1.26	50000.00	>LRS
47 Ti	# 3	45	226209.8	0.0000	153.4000	ppb	0.32	500.00	
51 V	# 2	45	128749.6	0.0000	26.6800	ppb	0.67	500.00	
52 Cr	# 2	45	59860.5	0.0000	10.5800	ppb	0.61	500.00	
55 Mn	# 3	45	2227407.0	0.0000	91.7000	ppb	0.35	3000.00	
56 Fe	# 1	45	93082768.0	0.0000	9506.0000	ppb	0.85	50000.00	
59 Co	# 3	45	104885.0	0.0000	5.4220	ppb	0.97	500.00	
60 Ni	# 2	45	18138.2	0.0000	9.8310	ppb	0.48	500.00	
63 Cu	# 2	45	27277.9	0.0000	5.8910	ppb	1.56	500.00	
66 Zn	# 3	72	61546.5	0.0000	24.4900	ppb	0.17	500.00	
75 As	# 2	72	3627.4	0.0000	5.7060	ppb	1.95	500.00	
78 Se	# 1	72	65.8	0.0000	0.1877	ppb	5.29	500.00	
88 Sr	# 3	72	9009296.0	0.0000	355.5000	ppb	0.49	500.00	
90 Zr	# 3	72	65741.4	0.0000	3.4070	ppb	0.90	50.00	
95 Mo	# 3	115	1617.9	0.0000	0.3424	ppb	4.28	500.00	
107 Ag	# 3	115	386.7	0.0000	0.0271	ppb	10.96	50.00	
111 Cd	# 3	115	1161.6	0.0000	0.4189	ppb	1.85	500.00	
118 Sn	# 3	115	25984.9	0.0000	3.2390	ppb	1.31	500.00	
121 Sb	# 3	115	3737.3	0.0000	0.3281	ppb	3.91	500.00	
137 Ba	# 3	115	1153487.0	0.0000	288.0000	ppb	1.76	1000.00	
182 W	# 3	159	2110.2	0.0000	0.1850	ppb	2.95	50.00	
205 Tl	# 3	159	3678.4	0.0000	0.1571	ppb	4.05	500.00	
208 Pb	# 3	159	205918.1	0.0000	6.5880	ppb	0.75	500.00	
235 U	# 3	159	271.1	0.0000	0.0086	ppb	8.69	30.00	
238 U	# 3	159	33436.2	0.0000	0.9488	ppb	0.77	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1369886.10	1.45	1679596.50	81.6	60 - 125	
45 Sc # 1	1162586.80	1.65	1396933.60	83.2	60 - 125	
45 Sc # 2	264368.81	0.42	307639.66	85.9	60 - 125	
45 Sc # 3	2294520.00	0.37	2728522.00	84.1	60 - 125	
72 Ge # 1	250454.30	1.03	339885.25	73.7	60 - 125	
72 Ge # 2	112747.20	0.61	148814.88	75.8	60 - 125	
72 Ge # 3	414665.03	0.54	555501.63	74.6	60 - 125	
115 In # 3	3003516.50	0.78	4115787.00	73.0	60 - 125	
159 Tb # 3	4457284.50	0.63	6212593.00	71.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

85A

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02087.D\F6B02087.D#
Date Acquired: Feb 2 2016 06:53 pm
Operator: CCapul
Sample Name: CCV8
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.31 ppb	2.23	25.00	90 - 110	
9 Be	24.08 ppb	3.46	25.00	90 - 110	
11 B	23.68 ppb	5.66	25.00	90 - 110	
23 Na	25120.00 ppb	0.93	25000.00	90 - 110	
24 Mg	25120.00 ppb	3.35	25000.00	90 - 110	
27 Al	25730.00 ppb	2.10	25000.00	90 - 110	
28 Si	2717.00 ppb	0.84	2500.00	90 - 110	
31 P	271.30 ppb	0.72	250.00	90 - 110	
39 K	26730.00 ppb	0.67	25000.00	90 - 110	
40 Ca	25040.00 ppb	0.67	25000.00	90 - 110	
47 Ti	247.30 ppb	0.59	250.00	90 - 110	
51 V	238.50 ppb	1.60	250.00	90 - 110	
52 Cr	238.30 ppb	0.93	250.00	90 - 110	
55 Mn	1425.00 ppb	1.52	1500.00	90 - 110	
56 Fe	24160.00 ppb	0.63	25000.00	90 - 110	
59 Co	230.60 ppb	1.88	250.00	90 - 110	
60 Ni	230.60 ppb	0.45	250.00	90 - 110	
63 Cu	238.10 ppb	1.06	250.00	90 - 110	
66 Zn	242.00 ppb	0.45	250.00	90 - 110	
75 As	254.90 ppb	0.46	250.00	90 - 110	
78 Se	246.40 ppb	0.76	250.00	90 - 110	
88 Sr	250.20 ppb	0.93	250.00	90 - 110	
90 Zr	21.68 ppb	1.76	25.00	90 - 110	Fail
95 Mo	248.60 ppb	2.32	250.00	90 - 110	
107 Ag	23.50 ppb	1.82	25.00	90 - 110	
111 Cd	243.60 ppb	0.86	250.00	90 - 110	
118 Sn	240.70 ppb	0.56	250.00	90 - 110	
121 Sb	243.40 ppb	1.66	250.00	90 - 110	
137 Ba	484.90 ppb	1.50	500.00	90 - 110	
182 W	25.08 ppb	0.95	25.00	90 - 110	
205 Tl	244.20 ppb	2.03	250.00	90 - 110	
208 Pb	245.20 ppb	2.50	250.00	90 - 110	
235 U	1.75 ppb	2.08	1.80	90 - 110	
238 U	250.10 ppb	0.90	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1370552.10	3.65	1679596.50	81.6	60 - 125	
45 Sc	1152804.60	0.61	1396933.60	82.5	60 - 125	
45 Sc	253680.20	0.22	307639.66	82.5	60 - 125	
45 Sc	2295774.80	1.63	2728522.00	84.1	60 - 125	
72 Ge	260672.75	0.63	339885.25	76.7	60 - 125	
72 Ge	115225.38	0.16	148814.88	77.4	60 - 125	
72 Ge	443382.34	1.05	555501.63	79.8	60 - 125	
115 In	3157175.80	0.68	4115787.00	76.7	60 - 125	
159 Tb	4649330.50	1.60	6212593.00	74.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02088.D\F6B02088.D#
Date Acquired:	Feb 2 2016 06:56 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB8
Misc Info:	
Vial Number:	1102
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0722	ppb	100599.1	129.10	0.20	
9 Be	-0.0032	ppb	57.8	51.68	0.10	
11 B	-0.1728	ppb	2375.8	13.34	5.00	
23 Na	-28.3800	ppb	71156.7	1.96	40.00	
24 Mg	1.3320	ppb	26609.1	17.13	10.00	
27 Al	1.2940	ppb	24367.5	14.57	20.00	
28 Si	1.4040	ppb	2547.0	8.93	20.00	
31 P	-0.4570	ppb	20592.9	42.71	10.00	
39 K	12.3900	ppb	42612.6	11.69	20.00	
40 Ca	5.9330	ppb	64767.4	1.99	25.00	
47 Ti	0.0253	ppb	118.9	62.17	0.50	
51 V	0.0642	ppb	2742.7	3.76	0.50	
52 Cr	0.0220	ppb	541.6	15.55	0.20	
55 Mn	0.0511	ppb	4772.1	29.15	0.20	
56 Fe	7.6860	ppb	83880.4	7.04	10.00	
59 Co	0.0084	ppb	638.9	24.58	0.20	
60 Ni	0.0768	ppb	267.1	5.05	0.20	
63 Cu	0.0207	ppb	224.4	5.23	0.40	
66 Zn	0.0510	ppb	930.1	7.07	2.00	
75 As	0.0745	ppb	111.8	22.35	0.20	
78 Se	0.0747	ppb	30.9	13.88	0.20	
88 Sr	0.0134	ppb	766.7	5.48	0.20	
90 Zr	-0.0017	ppb	408.9	106.89	2.00	
95 Mo	0.1594	ppb	897.8	15.06	0.40	
107 Ag	0.0006	ppb	53.3	177.20	0.20	
111 Cd	0.0123	ppb	51.4	24.33	0.20	
118 Sn	0.0865	ppb	920.1	14.48	0.20	
121 Sb	0.0476	ppb	1124.5	19.51	0.40	
137 Ba	0.0338	ppb	247.8	21.68	0.20	
182 W	0.0373	ppb	550.0	3.21	1.00	
205 Tl	0.0391	ppb	1117.9	11.04	0.20	
208 Pb	0.0066	ppb	963.4	49.77	0.10	
235 U	0.0004	ppb	16.7	25.49	1.00	
238 U	0.0313	ppb	1273.4	14.37	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1557360.9	1.48	1679596.50	92.7	60 - 125	
45 Sc	1163467.0	1.07	1396933.60	83.3	60 - 125	
45 Sc	262343.0	1.12	307639.66	85.3	60 - 125	
45 Sc	2380847.8	0.83	2728522.00	87.3	60 - 125	
72 Ge	275962.9	0.09	339885.25	81.2	60 - 125	
72 Ge	124570.9	0.51	148814.88	83.7	60 - 125	
72 Ge	471775.2	0.41	555501.63	84.9	60 - 125	
115 In	3472570.5	0.85	4115787.00	84.4	60 - 125	
159 Tb	5005097.0	0.43	6212593.00	80.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B02.B\F6B02095.D\F6B02095.D#
Date Acquired:	Feb 2 2016 07:27 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B005-03
Misc Info:	
Vial Number:	2502
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 02 2016 12:27 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	462775.2	0.0000	18.9900	ppb	1.18	50.00	
9 Be	# 3	6	3498.3	0.0000	0.5563	ppb	1.28	50.00	
11 B	# 3	6	54648.1	0.0000	10.4800	ppb	0.82	50.00	
23 Na	# 1	45	2111485.0	0.0000	542.9000	ppb	1.24	50000.00	
24 Mg	# 3	45	104303500.0	0.0000	8531.0000	ppb	0.80	50000.00	
27 Al	# 3	45	236662400.0	0.0000	15090.0000	ppb	1.07	50000.00	
28 Si	# 1	45	1129137.0	0.0000	1109.0000	ppb	1.69	5000.00	
31 P	# 3	45	172083.4	0.0000	203.5000	ppb	1.19	500.00	
39 K	# 2	45	2048173.0	0.0000	3000.0000	ppb	1.13	50000.00	
40 Ca	# 1	45	2043178000.0	0.0000	300200.0000	ppb	0.90	50000.00	>LRS
47 Ti	# 3	45	253782.4	0.0000	164.3000	ppb	0.65	500.00	
51 V	# 2	45	155355.3	0.0000	32.9900	ppb	0.19	500.00	
52 Cr	# 2	45	67177.9	0.0000	12.1300	ppb	0.17	500.00	
55 Mn	# 3	45	2597583.0	0.0000	102.1000	ppb	0.60	3000.00	
56 Fe	# 1	45	100848300.0	0.0000	10490.0000	ppb	1.02	50000.00	
59 Co	# 3	45	122703.8	0.0000	6.0590	ppb	0.70	500.00	
60 Ni	# 2	45	24261.0	0.0000	13.4500	ppb	0.34	500.00	
63 Cu	# 2	45	48907.9	0.0000	10.8100	ppb	0.27	500.00	
66 Zn	# 3	72	107263.0	0.0000	41.2100	ppb	0.85	500.00	
75 As	# 2	72	3396.2	0.0000	5.3880	ppb	1.81	500.00	
78 Se	# 1	72	54.4	0.0000	0.1567	ppb	6.45	500.00	
88 Sr	# 3	72	13025560.0	0.0000	493.9000	ppb	0.94	500.00	
90 Zr	# 3	72	146489.7	0.0000	7.3190	ppb	1.00	50.00	
95 Mo	# 3	115	2129.1	0.0000	0.4519	ppb	2.36	500.00	
107 Ag	# 3	115	514.5	0.0000	0.0369	ppb	12.88	50.00	
111 Cd	# 3	115	1254.6	0.0000	0.4511	ppb	6.18	500.00	
118 Sn	# 3	115	26638.3	0.0000	3.3090	ppb	1.41	500.00	
121 Sb	# 3	115	4139.7	0.0000	0.3674	ppb	1.13	500.00	
137 Ba	# 3	115	8847974.0	0.0000	2201.0000	ppb	0.35	1000.00	>LRS
182 W	# 3	159	2709.3	0.0000	0.2451	ppb	1.29	50.00	
205 Tl	# 3	159	3717.3	0.0000	0.1624	ppb	3.31	500.00	
208 Pb	# 3	159	222668.2	0.0000	7.2830	ppb	0.48	500.00	
235 U	# 3	159	232.2	0.0000	0.0075	ppb	2.20	30.00	
238 U	# 3	159	30615.8	0.0000	0.8877	ppb	1.30	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1709329.40	0.77	1679596.50	101.8	60 - 125	
45 Sc # 1	1141827.80	0.96	1396933.60	81.7	60 - 125	
45 Sc # 2	258973.36	0.26	307639.66	84.2	60 - 125	
45 Sc # 3	2403216.80	0.97	2728522.00	88.1	60 - 125	
72 Ge # 1	246017.91	0.72	339885.25	72.4	60 - 125	
72 Ge # 2	111713.48	0.92	148814.88	75.1	60 - 125	
72 Ge # 3	431513.59	0.27	555501.63	77.7	60 - 125	
115 In # 3	3014602.50	0.35	4115787.00	73.2	60 - 125	
159 Tb # 3	4361498.00	0.02	6212593.00	70.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

2 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02096.D\F6B02096.D#
Date Acquired: Feb 2 2016 07:31 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B005-04
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	492599.5	0.0000	20.1700	ppb	0.72	50.00	
9 Be	# 3	6	3783.9	0.0000	0.5929	ppb	4.25	50.00	
11 B	# 3	6	58093.1	0.0000	10.9900	ppb	0.21	50.00	
23 Na	# 1	45	2622606.0	0.0000	657.8000	ppb	1.08	50000.00	
24 Mg	# 3	45	110576500.0	0.0000	8831.0000	ppb	0.03	50000.00	
27 Al	# 3	45	270771390.0	0.0000	16860.0000	ppb	0.71	50000.00	
28 Si	# 1	45	2283695.0	0.0000	2158.0000	ppb	1.98	5000.00	
31 P	# 3	45	206024.3	0.0000	242.7000	ppb	0.67	500.00	
39 K	# 2	45	2349919.0	0.0000	3353.0000	ppb	0.70	50000.00	
40 Ca	# 1	45	2114914000.0	0.0000	298800.0000	ppb	0.75	50000.00	>LRS
47 Ti	# 3	45	302803.7	0.0000	191.4000	ppb	0.36	500.00	
51 V	# 2	45	177026.0	0.0000	36.6100	ppb	0.38	500.00	
52 Cr	# 2	45	75385.7	0.0000	13.2400	ppb	0.21	500.00	
55 Mn	# 3	45	2706942.0	0.0000	103.9000	ppb	0.92	3000.00	
56 Fe	# 1	45	114583800.0	0.0000	11460.0000	ppb	0.77	50000.00	
59 Co	# 3	45	125889.4	0.0000	6.0690	ppb	0.89	500.00	
60 Ni	# 2	45	25713.7	0.0000	13.8600	ppb	0.74	500.00	
63 Cu	# 2	45	24506.4	0.0000	5.2510	ppb	0.09	500.00	
66 Zn	# 3	72	360257.1	0.0000	136.4000	ppb	0.56	500.00	
75 As	# 2	72	3873.7	0.0000	6.0330	ppb	1.88	500.00	
78 Se	# 1	72	63.8	0.0000	0.1788	ppb	4.91	500.00	
88 Sr	# 3	72	14726050.0	0.0000	547.8000	ppb	0.07	500.00	>LRS
90 Zr	# 3	72	161671.6	0.0000	7.9260	ppb	0.05	50.00	
95 Mo	# 3	115	2374.7	0.0000	0.4983	ppb	7.56	500.00	
107 Ag	# 3	115	540.0	0.0000	0.0383	ppb	11.29	50.00	
111 Cd	# 3	115	1430.1	0.0000	0.5078	ppb	5.88	500.00	
118 Sn	# 3	115	28344.9	0.0000	3.4750	ppb	1.56	500.00	
121 Sb	# 3	115	4638.7	0.0000	0.4117	ppb	0.20	500.00	
137 Ba	# 3	115	15608380.0	0.0000	3832.0000	ppb	0.51	1000.00	>LRS
182 W	# 3	159	2759.3	0.0000	0.2469	ppb	1.02	50.00	
205 Tl	# 3	159	3989.6	0.0000	0.1726	ppb	0.42	500.00	
208 Pb	# 3	159	242925.0	0.0000	7.8570	ppb	0.81	500.00	
235 U	# 3	159	256.7	0.0000	0.0082	ppb	9.45	30.00	
238 U	# 3	159	32624.0	0.0000	0.9354	ppb	0.23	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1737503.80	0.92	1679596.50	103.4	60 - 125	
45 Sc # 1	1187394.30	1.38	1396933.60	85.0	60 - 125	
45 Sc # 2	266294.25	0.25	307639.66	86.6	60 - 125	
45 Sc # 3	2461310.30	0.21	2728522.00	90.2	60 - 125	
72 Ge # 1	254355.75	0.27	339885.25	74.8	60 - 125	
72 Ge # 2	113979.59	0.80	148814.88	76.6	60 - 125	
72 Ge # 3	439886.09	0.40	555501.63	79.2	60 - 125	
115 In # 3	3054635.30	0.63	4115787.00	74.2	60 - 125	
159 Tb # 3	4411180.00	0.27	6212593.00	71.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

3 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02099.D\F6B02099.D#
Date Acquired: Feb 2 2016 07:44 pm
Operator: CCapul
Sample Name: CCV9
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 02 2016 12:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	23.49 ppb	0.90	25.00	90 - 110	
9 Be	21.89 ppb	1.34	25.00	90 - 110	Fail
11 B	22.07 ppb	0.47	25.00	90 - 110	Fail
23 Na	25580.00 ppb	0.37	25000.00	90 - 110	
24 Mg	25690.00 ppb	0.44	25000.00	90 - 110	
27 Al	26190.00 ppb	0.39	25000.00	90 - 110	
28 Si	2844.00 ppb	0.72	2500.00	90 - 110	Fail
31 P	281.90 ppb	0.30	250.00	90 - 110	Fail
39 K	27030.00 ppb	0.76	25000.00	90 - 110	
40 Ca	25380.00 ppb	0.30	25000.00	90 - 110	
47 Ti	250.50 ppb	0.98	250.00	90 - 110	
51 V	239.80 ppb	0.55	250.00	90 - 110	
52 Cr	238.50 ppb	0.40	250.00	90 - 110	
55 Mn	1410.00 ppb	1.27	1500.00	90 - 110	
56 Fe	23890.00 ppb	0.37	25000.00	90 - 110	
59 Co	229.00 ppb	1.09	250.00	90 - 110	
60 Ni	230.60 ppb	0.67	250.00	90 - 110	
63 Cu	237.00 ppb	0.92	250.00	90 - 110	
66 Zn	240.80 ppb	0.31	250.00	90 - 110	
75 As	255.90 ppb	0.45	250.00	90 - 110	
78 Se	244.00 ppb	0.32	250.00	90 - 110	
88 Sr	245.40 ppb	0.16	250.00	90 - 110	
90 Zr	22.25 ppb	0.16	25.00	90 - 110	Fail
95 Mo	264.00 ppb	1.61	250.00	90 - 110	
107 Ag	24.08 ppb	0.70	25.00	90 - 110	
111 Cd	246.10 ppb	0.45	250.00	90 - 110	
118 Sn	245.40 ppb	0.89	250.00	90 - 110	
121 Sb	249.20 ppb	1.38	250.00	90 - 110	
137 Ba	500.70 ppb	1.11	500.00	90 - 110	
182 W	24.30 ppb	0.19	25.00	90 - 110	
205 Tl	232.90 ppb	0.87	250.00	90 - 110	
208 Pb	232.80 ppb	0.74	250.00	90 - 110	
235 U	1.64 ppb	0.69	1.80	90 - 110	
238 U	238.80 ppb	1.25	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1657357.30	0.91	1679596.50	98.7	60 - 125	
45 Sc	1154510.80	0.35	1396933.60	82.6	60 - 125	
45 Sc	254239.16	0.47	307639.66	82.6	60 - 125	
45 Sc	2384278.00	0.42	2728522.00	87.4	60 - 125	
72 Ge	259577.16	0.33	339885.25	76.4	60 - 125	
72 Ge	115089.11	0.38	148814.88	77.3	60 - 125	
72 Ge	448117.91	0.20	555501.63	80.7	60 - 125	
115 In	3044542.80	0.49	4115787.00	74.0	60 - 125	
159 Tb	4563172.00	0.87	6212593.00	73.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B02.B\F6B02100.D\F6B02100.D#
Date Acquired: Feb 2 2016 07:48 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB9
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 02 2016 12:27 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1674	ppb	113298.2	11.58	0.20	
9 Be	-0.0048	ppb	55.6	41.79	0.10	
11 B	0.6643	ppb	6980.7	5.15	5.00	
23 Na	-27.9000	ppb	73324.0	1.86	40.00	
24 Mg	1.6010	ppb	30853.8	8.90	10.00	
27 Al	1.3410	ppb	25922.4	13.22	20.00	
28 Si	5.9260	ppb	7275.4	3.55	20.00	
31 P	2.1730	ppb	23268.0	9.00	10.00	
39 K	13.8200	ppb	44197.5	9.23	20.00	
40 Ca	6.5910	ppb	69732.7	0.96	25.00	
47 Ti	0.0328	ppb	134.4	35.64	0.50	
51 V	0.0673	ppb	2795.4	15.59	0.50	
52 Cr	0.0207	ppb	541.8	11.23	0.20	
55 Mn	0.0709	ppb	5445.7	19.63	0.20	
56 Fe	7.3770	ppb	81322.0	6.74	10.00	
59 Co	0.0089	ppb	668.9	26.70	0.20	
60 Ni	0.0599	ppb	239.8	16.99	0.20	
63 Cu	0.0210	ppb	229.1	19.06	0.40	
66 Zn	0.0337	ppb	897.8	26.36	2.00	
75 As	0.0938	ppb	124.2	7.02	0.20	
78 Se	0.0633	ppb	26.7	11.68	0.20	
88 Sr	0.0198	ppb	971.2	11.63	0.20	
90 Zr	-0.0004	ppb	446.7	488.88	2.00	
95 Mo	0.1613	ppb	890.1	22.20	0.40	
107 Ag	0.0010	ppb	57.8	176.07	0.20	
111 Cd	0.0074	ppb	35.2	91.45	0.20	
118 Sn	0.0796	ppb	840.1	19.56	0.20	
121 Sb	0.0662	ppb	1312.3	9.85	0.40	
137 Ba	0.0431	ppb	285.6	3.16	0.20	
182 W	0.0311	ppb	455.6	7.58	1.00	
205 Tl	0.0366	ppb	1014.5	3.16	0.20	
208 Pb	0.0050	ppb	870.0	14.66	0.10	
235 U	0.0004	ppb	17.8	81.23	1.00	
238 U	0.0308	ppb	1204.5	8.52	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1782145.4	1.25	1679596.50	106.1	60 - 125	
45 Sc	1170126.5	1.00	1396933.60	83.8	60 - 125	
45 Sc	265971.6	0.80	307639.66	86.5	60 - 125	
45 Sc	2459140.5	1.06	2728522.00	90.1	60 - 125	
72 Ge	275736.0	0.22	339885.25	81.1	60 - 125	
72 Ge	123605.2	0.31	148814.88	83.1	60 - 125	
72 Ge	480720.9	0.59	555501.63	86.5	60 - 125	
115 In	3408888.3	0.92	4115787.00	82.8	60 - 125	
159 Tb	4809479.5	0.16	6212593.00	77.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B02.B\F6B02004.D\F6B02004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 02515001

Book #: EIM-057
Batch: TMB0035
Matrix: Soil
Digestor ID: D

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	92.8 °C		92.4 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 02 - 29	4
LCS-2	↓ - 02 - 30	4
MS	same spike soln & vol	as LCS 1 & 2
Blank Soil (Bead)	SM5A - 03 - 02 - 04	2g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SW1A - 005 - 14 - 09	10
HCl	↓ - 12 - 08	5+5
H_2O_2	↓ - 12 - 23	10
HNO_3(1:1)	SM5B - 03 - 68 - 03	10
pH Strip (0-14)	NA	NA

Digestate Location	Metalg
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 03
☑ Thermometer ID:	150590648 / D24
☑ Pipette ID:	142780357
☑ Pipette ID:	239360318
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP

Standard Added By: SP Witnessed By: TH

Extract Rcvd By: CW Checked By: [illegible]

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IMB003S01	IMB003SB	2.04	g	2/2/16 12:44	100	2	100	1	
16IMB003S02	IMB003SL	2.03	g	2/2/16 12:45	100	2	100	1	
16IMB003S03	B005-01	2.05	g	2/2/16 12:45	100	2	100	0.976	
16IMB003S04	B005-01M	2.05	g	2/2/16 12:46	100	2	100	0.976	
16IMB003S05	B005-01D	2.08	g	2/2/16 12:46	100	2	100	0.962	
16IMB003S06	B005-02	2.08	g	2/2/16 12:47	100	2	100	0.962	
16IMB003S07	B005-03	2.02	g	2/2/16 12:48	100	2	100	0.99	
16IMB003S08	B005-04	2.03	g	2/2/16 12:49	100	2	100	0.985	

SP 2/2/16

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 2/2/16 14:03

☑ Digestion Ended @ 2/2/16 16:34

Comments:

Prepared By: SPara

Checked By: [illegible]

Date 2/4/16

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16B012**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16B012**

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 02-12-2016
EMAX Batch No.: 16B012

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Revised Laboratory Report
Project: Cannon AFB PBR

Enclosed is the Laboratory report for samples received on 02/03/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CABAC-SB10-000.5	B012-01	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB10-004.5	B012-02	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB10-010	B012-03	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB06-000.5	B012-04	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB06-005	B012-05	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB06-010	B012-06	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB07-000.5	B012-07	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB07-003.5	B012-08	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB07-010	B012-09	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB07-110	B012-10	02/02/16	SOIL	CANCELLED
CABAC-SB08-000.5	B012-11	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB08-005	B012-12	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB08-010	B012-13	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB07-010MS	B012-09M	02/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB07-010DUP	B012-09D	02/02/16	SOIL	2 METALS BY ICP-MS

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

Revised Report

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B012

METHOD METHOD SW6020A
TOTAL METALS BY ICP-MS

A total of twelve(12) soil samples were received on 02/03/16 to be analyzed for Total Metals by ICP-MS in accordance with Method METHOD SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project. Refer to MRL summary form 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.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. All Analytes in IMB005SL - all analytes were within LCS QC limits. were within LCS limits. 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) MS was analyzed. B012-09M - matrix spike recovery for all analytes were within MS QC limits. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC 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.

Revised Report

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16 B012
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7822 9465 2138	Recipient I. PATEL
☐ EMAX Courier ☐ Client Delivery		Date 2/3/16 Time 0930

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	☑ plastic bag
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 2.5 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	A - S/N ____	FM 1/20/15 B - S/N 140252070	C - S/N 140252067	D - S/N 1505556 30	

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	1	D7	Time 1116 on label	R1 - label
2	2	D10		R1 - COC
~~10~~ 9 AM 2/11/16	10	D7	Time 1334 on label	R1 - COC
13	13	D22	Assume to be sample no. 13	R1 - COC

AM 2/3/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

☐ Continue to next page.

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ____	D13	Out of Holding Time	R1	Proceed as indicated in ☑ COC ☑ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ____	D16	Preservation not indicated in ____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
✓ D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	
✓ D10	No initial/date on corrections in COC/label	D22	No Client label on JAR	R10	
D11	Container count mismatch COC vs received	D23		R11	
D12	Container size mismatch COC vs received	D24		R12	

REVIEWS:

Sample Labeling: Date 2/3/16 2/3/16

SRF: Date 2/3/16

PM: Date 2/3/16

Revised Report

SHAMROCK PLZ STE 100
OMAHA, NE 68154
UNITED STATES US

BILL THIRD PARTY

TO **EMAX LABORATORIES**

1835 W. 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J161016010401uv

WED - 03 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7822 9465 2138**

A7 HHRA

90501
CA-US **LAX**

Andy Mai

From: Zorinsky, Jennifer [jennifer.zorinsky@aecom.com]
Sent: Wednesday, February 03, 2016 12:44 PM
To: Andy Mai
Subject: RE: Cannon sample IDs; 16B012

For sample 1, CABAC-SB10-000.5, the time on the label is correct, 11:16.

For sample 7, CABAC-SB07-110, the time on the COC is correct, 13:35.

Please let me know if there are any further questions.

Thanks!

From: Andy Mai [mailto:AMai@emaxlabs.com]
Sent: Wednesday, February 03, 2016 12:24 PM
To: Zorinsky, Jennifer
Subject: RE: Cannon sample IDs; 16B012

Perfect. I was just about to ask you about that.

There are some minor collection time discrepancies between some of the labels and the COC. We will follow the COC unless instructed otherwise. Please see SRF1 for more details.

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:
February 15th

From: Zorinsky, Jennifer [mailto:jennifer.zorinsky@aecom.com]
Sent: Wednesday, February 03, 2016 8:49 AM
To: Andy Mai
Subject: Cannon sample IDs

Andy,

The sampler at Cannon just called to say that he might have left a label off of one of the samples yesterday. If so, the sample ID is CABAC-SB08-010.

Thanks!

Jennifer Zorinsky
Chemist, Environment
D +1-402-952-2563
M +1-832-545-1583
jennifer.zorinsky@aecom.com

Andy Mai

From: Zorinsky, Jennifer [jennifer.zorinsky@aecom.com]
Sent: Wednesday, February 10, 2016 3:11 PM
To: Andy Mai
Subject: Cannon MS/MSD issues
Follow Up Flag: Follow up
Flag Status: Completed

Andy,

Here is the total list of MS/MSD issues. In all cases, the sample ID with the 1 (e.g., CAxx-Sx-**1**xxx) is not a sample, but extra volume for MS/MSD analysis. Please let me know which ones are fixable, which ones require reanalysis, and whether or not there is sample volume remaining to reanalyze, if needed. In total, there are 12 samples, affecting 8 SDGs. The first two SDGs have already been reported. Again, I am very sorry for this mess.

16B005 – CABAC-SB01-110 is the MS/MSD volume for CABAC-SB01-010. Please revise the report to remove sample CABAC-SB01-110. MS/DUP was analyzed on CABAC-SB01-000.5. This is sufficient; no other changes needed.
16B012 – CABAC-SB07-110 is the MS/MSD volume for CABAC-SB07-010. Please revise the report to remove sample CABAC-SB07-110. Please change the MS/DUP reference sample to CABAC-SB07-010.
16B027 – CAAT109-SB20-110 is the MS/MSD volume for CAAT109-SB20-010. Please do not report CAAT109-SB20-110 as a sample. Please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B048 – CAAT109-SB28-120 is the MS/MSD volume for CAAT109-SB28-020. Please do not report CAAT109-SB28-120 as a sample. Please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B052 – CA508-SS11-100.5 is the MS/MSD volume for CA508-SS11-000.5. Please do not report CA508-SS11-100.5 as a sample. Please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B060 – CA504-SG03-S-110 is the MS/MSD volume for CA504-SG03-S-010. Please do not report CA504-SG03-S-110 as a sample. I emailed this one to you earlier. If I did not catch it in time, please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B069 – CA505-SB11-129 is the MS/MSD volume for CA505-SB11-029. Please do not report CA505-SB11-129 as a sample. CA507-SS78-100.5 is the MS/MSD volume for CA507-SS78-000.5. Please do not report CA507-SS78-100.5 as a sample. I emailed this one to you earlier. If I did not catch it in time, please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.
16B070 – CA129-SB13-102 is the MS/MSD volume for CA129-SB13-002. Please do not report CA129-SB13-102 as a sample. CA129-SB18-105 is the MS/MSD volume for CA129-SB18-005. Please do not report CA129-SB18-105 as a sample. CA022-SS12-100.5 is the MS/MSD for CA022-SS12-000.5. Please do not report CA022-SS12-100.5 as a sample. CA022-SS11-100.5 is the MS/MSD volume for CA022-SS11-000.5. Please do not report CA022-SS11-100.5 as a sample. I emailed this one to you earlier. If I did not catch it in time, please let me know if an MS/MSD was analyzed on any samples in this SDG. If not, please advise as to remaining sample volume.

Please contact me with any questions.

5A

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16B012

Project Name: Cannon AFB
Project No.: 60425210.23446540
Project Location: Clovis, NM
Project Manager: Mike Sonderman
Sampler(s): Kyle Kloewer / Jessica Hoppmann

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	Analytical Parameters: Arsenic/Thallium 6020A	Preservative / Remarks
1	2/2/16	1119		X	CABAC-SB10-000.5	soil	1	4 oz. jar	X	4°C
2		1122		X	CABAC-SB10-004.5				X	4°C
3		1133		X	CABAC-SB10-010				X	4°C
4		1241		X	CABAC-SB06-000.5				X	4°C
5		1244		X	CABAC-SB06-005				X	4°C
6		1251		X	CABAC-SB06-010				X	4°C
7		1317		X	CABAC-SB07-000.5				X	4°C
8		1321		X	CABAC-SB07-003.5				X	4°C
9		1334		X	CABAC-SB07-010				X	4°C
10		1335		X	CABAC-SB07-110				X	4°C, MS/MSD
11		1423		X	CABAC-SB08-000.5				X	4°C
12		1426		X	CABAC-SB08-005				X	4°C
13		1438		X	CABAC-SB08-010				X	4°C

Jessica Hoppmann 2/2/16

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: Jessica Hoppmann	2/2/16	1600	Method of Shipment: Fedex	24 hour turnaround
Received by:			Airbill No.:	
Relinquished by:			Lab Address: EMAX Laboratories 1835 W. 205th St. Torrance, CA 90501	T = 2.5° C
Received for Laboratory by:	2/3/16	0930		

P Drive/Office Administration/Chain of Custody Form (Nov 2012) White copy - Laboratory Yellow copy - Laboratory Pink copy - URS

129976

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 or estimated value.
*	*	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.

LAB CHRONICLE
TOTAL METALS BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B012
Instrument ID : T-IF6

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IMB005SB	1	NA	02/03/1618:27	02/03/1614:33	F6B03063	F6B03052	IMB005S	Method Blank
LCS1S	IMB005SL	1	NA	02/03/1618:40	02/03/1614:33	F6B03066	F6B03064	IMB005S	Lab Control Sample (LCS)
CABAC-SB10-000.5	B012-01	0.976	9.2	02/03/1618:44	02/03/1614:33	F6B03067	F6B03064	IMB005S	Field Sample
CABAC-SB10-004.5	B012-02	0.985	5.7	02/03/1618:48	02/03/1614:33	F6B03068	F6B03064	IMB005S	Field Sample
CABAC-SB10-010	B012-03	0.985	10.5	02/03/1618:52	02/03/1614:33	F6B03069	F6B03064	IMB005S	Field Sample
CABAC-SB06-000.5	B012-04	0.971	8.8	02/03/1618:57	02/03/1614:33	F6B03070	F6B03064	IMB005S	Field Sample
CABAC-SB06-005	B012-05	0.990	11.0	02/03/1619:01	02/03/1614:33	F6B03071	F6B03064	IMB005S	Field Sample
CABAC-SB06-010	B012-06	0.976	7.6	02/03/1619:05	02/03/1614:33	F6B03072	F6B03064	IMB005S	Field Sample
CABAC-SB07-000.5	B012-07	0.971	9.9	02/03/1619:10	02/03/1614:33	F6B03073	F6B03064	IMB005S	Field Sample
CABAC-SB07-003.5	B012-08	0.976	12.0	02/03/1619:14	02/03/1614:33	F6B03074	F6B03064	IMB005S	Field Sample
CABAC-SB07-010MS	B012-09M	0.990	10.3	02/03/1619:35	02/03/1614:33	F6B03079	F6B03076	IMB005S	Matrix Spike Sample (MS)
CABAC-SB07-010AS	B012-09A	0.980	10.3	02/03/1619:40	02/03/1614:33	F6B03080	F6B03076	IMB005S	Analytical Spike Sample
CABAC-SB07-010	B012-09	0.980	10.3	02/03/1619:44	02/03/1614:33	F6B03081	F6B03076	IMB005S	Field Sample
CABAC-SB07-010DL	B012-09J	4.90	10.3	02/03/1619:48	02/03/1614:33	F6B03082	F6B03076	IMB005S	Diluted Sample
CABAC-SB07-010DUP	B012-09D	0.995	10.3	02/03/1619:52	02/03/1614:33	F6B03083	F6B03076	IMB005S	Duplicate Sample
CABAC-SB08-000.5	B012-11	0.990	13.6	02/03/1619:57	02/03/1614:33	F6B03084	F6B03076	IMB005S	Field Sample
CABAC-SB08-005	B012-12	0.980	10.7	02/03/1620:01	02/03/1614:33	F6B03085	F6B03076	IMB005S	Field Sample
CABAC-SB08-010	B012-13	0.976	6.8	02/03/1620:05	02/03/1614:33	F6B03086	F6B03076	IMB005S	Field Sample

FN - Filename
% Moist - Percent Moisture

Revised Report

RESULTS SUMMARIES

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB10-000.5	Date Analyzed:	02/03/16 18:44
Lab Samp ID:	B012-01	Dilution Factor:	0.976
Lab File ID:	F6B03067	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	9.2
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.33	0.537	0.0537	0.107
Thallium	0.154J	0.537	0.0537	0.107

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB10-004.5	Date Analyzed:	02/03/16 18:48
Lab Samp ID:	B012-02	Dilution Factor:	0.985
Lab File ID:	F6B03068	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	5.7
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.00	0.522	0.0522	0.104
Thallium	0.0900J	0.522	0.0522	0.104

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB10-010	Date Analyzed:	02/03/16 18:52
Lab Samp ID:	B012-03	Dilution Factor:	0.985
Lab File ID:	F6B03069	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	10.5
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.86	0.550	0.0550	0.110
Thallium	0.0928J	0.550	0.0550	0.110

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB06-000.5	Date Analyzed:	02/03/16 18:57
Lab Samp ID:	B012-04	Dilution Factor:	0.971
Lab File ID:	F6B03070	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	8.8
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.32	0.532	0.0532	0.106
Thallium	0.142J	0.532	0.0532	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB06-005	Date Analyzed:	02/03/16 19:01
Lab Samp ID:	B012-05	Dilution Factor:	0.990
Lab File ID:	F6B03071	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	11.0
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.01	0.556	0.0556	0.111
Thallium	0.136J	0.556	0.0556	0.111

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB06-010	Date Analyzed:	02/03/16 19:05
Lab Samp ID:	B012-06	Dilution Factor:	0.976
Lab File ID:	F6B03072	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	7.6
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.03	0.528	0.0528	0.106
Thallium	0.143J	0.528	0.0528	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB07-000.5	Date Analyzed:	02/03/16 19:10
Lab Samp ID:	B012-07	Dilution Factor:	0.971
Lab File ID:	F6B03073	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	9.9
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.07	0.539	0.0539	0.108
Thallium	0.168J	0.539	0.0539	0.108

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB07-003.5	Date Analyzed:	02/03/16 19:14
Lab Samp ID:	B012-08	Dilution Factor:	0.976
Lab File ID:	F6B03074	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	12.0
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.35	0.555	0.0555	0.111
Thallium	0.125J	0.555	0.0555	0.111

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB07-010	Date Analyzed:	02/03/16 19:44
Lab Samp ID:	B012-09	Dilution Factor:	0.980
Lab File ID:	F6B03081	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	10.3
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.79	0.546	0.0546	0.109
Thallium	0.143J	0.546	0.0546	0.109

Revised Report

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METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB08-000.5	Date Analyzed:	02/03/16 19:57
Lab Samp ID:	B012-11	Dilution Factor:	0.990
Lab File ID:	F6B03084	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	13.6
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.74	0.573	0.0573	0.115
Thallium	0.237J	0.573	0.0573	0.115

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB08-005	Date Analyzed:	02/03/16 20:01
Lab Samp ID:	B012-12	Dilution Factor:	0.980
Lab File ID:	F6B03085	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	10.7
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.98	0.549	0.0549	0.110
Thallium	0.0979J	0.549	0.0549	0.110

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB08-010	Date Analyzed:	02/03/16 20:05
Lab Samp ID:	B012-13	Dilution Factor:	0.976
Lab File ID:	F6B03086	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	6.8
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.13	0.524	0.0524	0.105
Thallium	0.127J	0.524	0.0524	0.105

QC SUMMARIES

METHOD BLANK

Method: 6020A

QC Measure: IMB005SB

Associated Samples:

CABAC-SB10-000.5
CABAC-SB10-004.5
CABAC-SB10-010
CABAC-SB06-000.5
CABAC-SB06-005
CABAC-SB06-010
CABAC-SB07-000.5
CABAC-SB07-003.5
CABAC-SB07-010
CABAC-SB08-000.5
CABAC-SB08-005
CABAC-SB08-010

Revised Report

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	MBLK1S	Date Analyzed:	02/03/16 18:27
Lab Samp ID:	IMB005SB	Dilution Factor:	1
Lab File ID:	F6B03063	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	NA
Calib. Ref.:	F6B03052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.D500	0.100
Thallium	ND	0.500	0.0500	0.100

LCS/LCSD

Method: 6020A

QC Measure: IMB005SL

Associated Samples:

CABAC-SB10-000.5
CABAC-SB10-004.5
CABAC-SB10-010
CABAC-SB06-000.5
CABAC-SB06-005
CABAC-SB06-010
CABAC-SB07-000.5
CABAC-SB07-003.5
CABAC-SB07-010
CABAC-SB08-000.5
CABAC-SB08-005
CABAC-SB08-010

Revised Report

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IMB005SB	IMB005SL		
LAB FILE ID:	F6B03063	F6B03066		
DATIME EXTRCTD:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	NA
DATIME ANALYZD:	02/03/1618:27	02/03/1618:40	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03052	F6B03064		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.8	99	80-120
Thallium	ND	20.0	21.5	108	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16B012
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILTN FACTR:	0.980	0.990		
SAMPLE ID:	CABAC-SB07-010			
CONTROL NO.:	B012-09	B012-09M		
LAB FILE ID:	F6B03081	F6B03079		
DATIME EXTRCTD:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATIME ANALYZD:	02/03/1619:44	02/03/1619:35	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	2.79	22.1	22.9	91	80-120
Thallium	0.143J	22.1	22.5	101	80-120

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EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILUTION FACTOR:	0.980	4.90		
SAMPLE ID:	CABAC-SB07-010	CABAC-SB07-010		
EMAX SAMP ID:	B012-09	B012-09J		
LAB FILE ID:	F6B03081	F6B03082		
DATE EXTRACTED:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATE ANALYZED:	02/03/1619:44	02/03/1619:48	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	2.79	2.74	2	10
Thallium	.143J	ND	NA	10

Revised Report

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILTN FACTR:	0.980	0.980		
SAMPLE ID:	CABAC-SB07-010			
CONTROL NO.:	B012-09	B012-09A		
LAB FILE ID:	F6B03081	F6B03080		
DATIME EXTRCTD:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATIME ANALYZD:	02/03/1619:44	02/03/1619:40	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	2.79	21.9	25.4	103	75-125
Thallium	0.143J	21.9	24.5	111	75-125

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EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILUTION FACTOR:	0.980	0.995		
SAMPLE ID:	CABAC-SB07-010	CABAC-SB07-010		
EMAX SAMP ID:	B012-09	B012-09D		
LAB FILE ID:	F6B03081	F6B03083		
DATE EXTRACTED:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATE ANALYZED:	02/03/1619:44	02/03/1619:52	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	2.79	2.69	4	20
Thallium	.143J	.144J	NA	20

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RAW DATA

METALS

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB10-000.5	Date Analyzed:	02/03/16 18:44
Lab Samp ID:	B012-01	Dilution Factor:	0.976
Lab File ID:	F6B03067	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	9.2
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.33	0.537	0.0537	0.107
Thallium	0.154J	0.537	0.0537	0.107

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB10-004.5	Date Analyzed:	02/03/16 18:48
Lab Samp ID:	B012-02	Dilution Factor:	0.985
Lab File ID:	F6B03068	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	5.7
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.00	0.522	0.0522	0.104
Thallium	0.0900J	0.522	0.0522	0.104

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB10-010	Date Analyzed:	02/03/16 18:52
Lab Samp ID:	B012-03	Dilution Factor:	0.985
Lab File ID:	F6B03069	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	10.5
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.86	0.550	0.0550	0.110
Thallium	0.0928J	0.550	0.0550	0.110

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB06-000.5	Date Analyzed:	02/03/16 18:57
Lab Samp ID:	B012-04	Dilution Factor:	0.971
Lab File ID:	F6B03070	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	8.8
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.32	0.532	0.0532	0.106
Thallium	0.142J	0.532	0.0532	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB06-005	Date Analyzed:	02/03/16 19:01
Lab Samp ID:	B012-05	Dilution Factor:	0.990
Lab File ID:	F6B03071	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	11.0
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.01	0.556	0.0556	0.111
Thallium	0.136J	0.556	0.0556	0.111

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB06-010	Date Analyzed:	02/03/16 19:05
Lab Samp ID:	B012-06	Dilution Factor:	0.976
Lab File ID:	F6B03072	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	7.6
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.03	0.528	0.0528	0.106
Thallium	0.143J	0.528	0.0528	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB07-000.5	Date Analyzed:	02/03/16 19:10
Lab Samp ID:	B012-07	Dilution Factor:	0.971
Lab File ID:	F6B03073	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	9.9
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.07	0.539	0.0539	0.108
Thallium	0.168J	0.539	0.0539	0.108

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB07-003.5	Date Analyzed:	02/03/16 19:14
Lab Samp ID:	B012-08	Dilution Factor:	0.976
Lab File ID:	F6B03074	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	12.0
Calib. Ref.:	F6B03064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.35	0.555	0.0555	0.111
Thallium	0.125J	0.555	0.0555	0.111

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB07-010	Date Analyzed:	02/03/16 19:44
Lab Samp ID:	B012-09	Dilution Factor:	0.980
Lab File ID:	F6B03081	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	10.3
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.79	0.546	0.0546	0.109
Thallium	0.143J	0.546	0.0546	0.109

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METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB08-000.5	Date Analyzed:	02/03/16 19:57
Lab Samp ID:	B012-11	Dilution Factor:	0.990
Lab File ID:	F6B03084	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	13.6
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.74	0.573	0.0573	0.115
Thallium	0.237J	0.573	0.0573	0.115

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB08-005	Date Analyzed:	02/03/16 20:01
Lab Samp ID:	B012-12	Dilution Factor:	0.980
Lab File ID:	F6B03085	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	10.7
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.98	0.549	0.0549	0.110
Thallium	0.0979J	0.549	0.0549	0.110

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/02/16
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	CABAC-SB08-010	Date Analyzed:	02/03/16 20:05
Lab Samp ID:	B012-13	Dilution Factor:	0.976
Lab File ID:	F6B03086	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	6.8
Calib. Ref.:	F6B03076	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.13	0.524	0.0524	0.105
Thallium	0.127J	0.524	0.0524	0.105

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/03/16
SDG NO.	: 16B012	Date Extracted:	02/03/16 14:33
Sample ID:	MBLK1S	Date Analyzed:	02/03/16 18:27
Lab Samp ID:	IMB005SB	Dilution Factor:	1
Lab File ID:	F6B03063	Matrix :	SOIL
Ext Btch ID:	IMB005S	% Moisture :	NA
Calib. Ref.:	F6B03052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IMB005SB	IMB005SL		
LAB FILE ID:	F6B03063	F6B03066		
DATIME EXTRCTD:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	NA
DATIME ANALYZD:	02/03/1618:27	02/03/1618:40	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03052	F6B03064		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.8	99	80-120
Thallium	ND	20.0	21.5	108	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16B012
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILTN FACTR:	0.980	0.990		
SAMPLE ID:	CABAC-SB07-010			
CONTROL NO.:	B012-09	B012-09M		
LAB FILE ID:	F6B03081	F6B03079		
DATIME EXTRCTD:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATIME ANALYZD:	02/03/1619:44	02/03/1619:35	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	2.79	22.1	22.9	91	80-120
Thallium	0.143J	22.1	22.5	101	80-120

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EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILUTION FACTOR:	0.980	4.90		
SAMPLE ID:	CABAC-SB07-010	CABAC-SB07-010		
EMAX SAMP ID:	B012-09	B012-09J		
LAB FILE ID:	F6B03081	F6B03082		
DATE EXTRACTED:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATE ANALYZED:	02/03/1619:44	02/03/1619:48	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	2.79	2.74	2	10
Thallium	.143J	ND	NA	10

Revised Report

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILTN FACTR:	0.980	0.980		
SAMPLE ID:	CABAC-SB07-010			
CONTROL NO.:	B012-09	B012-09A		
LAB FILE ID:	F6B03081	F6B03080		
DATIME EXTRCTD:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATIME ANALYZD:	02/03/1619:44	02/03/1619:40	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	2.79	21.9	25.4	103	75-125
Thallium	0.143J	21.9	24.5	111	75-125

Revised Report

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B012
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	10.3
DILUTION FACTOR:	0.980	0.995		
SAMPLE ID:	CABAC-SB07-010	CABAC-SB07-010		
EMAX SAMP ID:	B012-09	B012-09D		
LAB FILE ID:	F6B03081	F6B03083		
DATE EXTRACTED:	02/03/1614:33	02/03/1614:33	DATE COLLECTED:	02/02/16
DATE ANALYZED:	02/03/1619:44	02/03/1619:52	DATE RECEIVED:	02/03/16
PREP. BATCH:	IMB005S	IMB005S		
CALIB. REF:	F6B03076	F6B03076		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	2.79	2.69	4	20
Thallium	.143J	.144J	NA	20

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ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	50	30	25	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/3/16 13:24

End Date: 2/3/16 21:44

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: ~~KA~~ 21881522
CW 2/4/16

- A183-06 filtered
- A183-06A, 06J As, Mn failed
  CW 2/11/16
- B012-10M renamed as B012-09M
  B012-10A renamed as B012-09A
  B012-10 renamed as B012-09
  B012-10J renamed as B012-09J
  B012-10D renamed as B012-09D
  per client request

Book #:	AF6-015
Instrument No.:	F6
Analytical Batch:	DF.B03
Analytical Sequence:	F6B03
Method File:	EMX6000H
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☑ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SMLB3B03.17-03	MRL1 (1)	SMLB3B03.17-07
S1	.17-02	MRL2 (0.5)	.17-01
S2	.17-04	MRL3 (CAT)	.17-02
S3	.17-05	MRL4	NA
S4	.17-06	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SMLB3B03.18-03
S7		Post-Spike 1	SMLA107-02-23
ICV	SMLB3B03.60.01	Post-Spike 2	02-24
CCV	.17-06	Post-Spike 3	NA
ICSA	.18.05	Post-Spike 4	
ICSAB	.18-06		
6020 TUNE SOLN.	.19-02		
200.8 TUNE SOLN.	.19-03		

Analyzed By: CW

Date: 2/3/16

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SEQUENCE FILE : IF6B03

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
F6B03003	BLNK	13:24	02/03/16	1.00
F6B03004	S0	13:29	02/03/16	1.00
F6B03005	S1 0.5	13:33	02/03/16	1.00
F6B03006	S2 50	13:38	02/03/16	1.00
F6B03007	S3 250	13:42	02/03/16	1.00
F6B03008	S4 500	13:46	02/03/16	1.00
F6B03009	ICV	13:50	02/03/16	1.00
F6B03010	ICB	13:54	02/03/16	1.00
F6B03011	MRLB0301	13:58	02/03/16	1.00
F6B03012	MRLB0302	14:02	02/03/16	1.00
F6B03013	ICSA	14:07	02/03/16	1.00
F6B03014	ICSAB	14:11	02/03/16	1.00
F6B03015	MRLB0303	14:15	02/03/16	1.00
F6B03016	CCV1	14:20	02/03/16	1.00
F6B03017	CCB1	14:24	02/03/16	1.00
F6B03018	BLANK	15:13	02/03/16	1.00
F6B03019	IMA012WB	15:18	02/03/16	1.00
F6B03020	IMA012WL	15:22	02/03/16	1.00
F6B03021	IMA012WC	15:26	02/03/16	1.00
F6B03022	A165-01A	15:31	02/03/16	1.00
F6B03023	A165-01	15:35	02/03/16	1.00
F6B03024	A165-01J	15:39	02/03/16	5.00
F6B03025	BLANK	15:43	02/03/16	1.00
F6B03026	MRLB0304	15:48	02/03/16	1.00
F6B03027	CCV2	15:52	02/03/16	1.00
F6B03028	CCB2	15:56	02/03/16	1.00
F6B03029	A165-01A	16:01	02/03/16	5.00
F6B03030	A165-01I	16:05	02/03/16	5.00
F6B03031	A165-01J	16:09	02/03/16	25.00
F6B03032	BLANK	16:13	02/03/16	1.00
F6B03033	MRLB0305	16:18	02/03/16	1.00
F6B03034	MRLB0306	16:22	02/03/16	1.00
F6B03035	CCV3	16:26	02/03/16	1.00
F6B03036	CCB3	16:31	02/03/16	1.00
F6B03037	A086-01A	16:35	02/03/16	5.00
F6B03038	A086-01I	16:39	02/03/16	5.00
F6B03039	A086-01J	16:43	02/03/16	25.00
F6B03040	A086-01M	16:48	02/03/16	5.00
F6B03041	A086-01S	16:52	02/03/16	5.00
F6B03042	BLANK	16:57	02/03/16	1.00
F6B03043	BLANK	17:01	02/03/16	1.00
F6B03044	CCV4	17:05	02/03/16	1.00
F6B03045	CCB4	17:09	02/03/16	1.00
F6B03046	A135-01I	17:14	02/03/16	10.00
F6B03047	A135-02I	17:18	02/03/16	10.00
F6B03048	A135-03I	17:22	02/03/16	10.00
F6B03049	L182-01N	17:27	02/03/16	1.00
F6B03050	L182-01K	17:31	02/03/16	10.00
F6B03051	BLANK	17:35	02/03/16	1.00
F6B03052	CCV5	17:40	02/03/16	1.00
F6B03053	CCB5	17:44	02/03/16	1.00

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F6B03054	IMA016SB	17:48	02/03/16	1.00
F6B03055	IMA016SL	17:52	02/03/16	1.00
F6B03056	IMA016SC	17:57	02/03/16	1.00
F6B03057	A151-01M	18:01	02/03/16	1.00
F6B03058	A151-01S	18:05	02/03/16	1.00
F6B03059	A151-01A	18:09	02/03/16	1.00
F6B03060	A151-01	18:14	02/03/16	1.00
F6B03061	A151-01J	18:18	02/03/16	5.00
F6B03062	BLANK	18:22	02/03/16	1.00
F6B03063	IMB005SB	18:27	02/03/16	1.00
F6B03064	CCV6	18:31	02/03/16	1.00
F6B03065	CCB6	18:35	02/03/16	1.00
F6B03066	IMB005SL	18:40	02/03/16	1.00
F6B03067	B012-01	18:44	02/03/16	1.00
F6B03068	B012-02	18:48	02/03/16	1.00
F6B03069	B012-03	18:52	02/03/16	1.00
F6B03070	B012-04	18:57	02/03/16	1.00
F6B03071	B012-05	19:01	02/03/16	1.00
F6B03072	B012-06	19:05	02/03/16	1.00
F6B03073	B012-07	19:10	02/03/16	1.00
F6B03074	B012-08	19:14	02/03/16	1.00
F6B03075	BLANK	19:18	02/03/16	1.00
F6B03076	CCV7	19:23	02/03/16	1.00
F6B03077	CCB7	19:27	02/03/16	1.00
F6B03078	B012-09	19:31	02/03/16	1.00
F6B03079	B012-09M	19:35	02/03/16	1.00
F6B03080	B012-09A	19:40	02/03/16	1.00
F6B03081	B012-09	19:44	02/03/16	1.00
F6B03082	B012-09J	19:48	02/03/16	5.00
F6B03083	B012-09D	19:52	02/03/16	1.00
F6B03084	B012-11	19:57	02/03/16	1.00
F6B03085	B012-12	20:01	02/03/16	1.00
F6B03086	B012-13	20:05	02/03/16	1.00
F6B03087	BLANK	20:09	02/03/16	1.00
F6B03088	CCV8	20:14	02/03/16	1.00
F6B03089	CCB8	20:18	02/03/16	1.00
F6B03090	IMA014WB	20:22	02/03/16	1.00
F6B03091	IMA014WL	20:27	02/03/16	1.00
F6B03092	IMA014WC	20:31	02/03/16	1.00
F6B03093	A183-06M	20:35	02/03/16	1.00
F6B03094	A183-06S	20:39	02/03/16	1.00
F6B03095	A183-06A	20:44	02/03/16	1.00
F6B03096	A183-06	20:48	02/03/16	1.00
F6B03097	A183-06J	20:52	02/03/16	1.00
F6B03098	A183-01	20:56	02/03/16	1.00
F6B03099	BLANK	21:01	02/03/16	1.00
F6B03100	CCV9	21:05	02/03/16	1.00
F6B03101	CCB9	21:09	02/03/16	1.00
F6B03102	A183-02	21:14	02/03/16	1.00
F6B03103	A183-03	21:18	02/03/16	1.00
F6B03104	A183-05	21:22	02/03/16	1.00
F6B03105	A183-07	21:27	02/03/16	1.00
F6B03106	A183-09	21:31	02/03/16	1.00
F6B03107	BLANK	21:35	02/03/16	1.00

F6B03108	CCV10	21:40	02/03/16	1.00
F6B03109	CCB10	21:44	02/03/16	1.00

Revised Report

SDG : _____ UNIT : % ICPMS CHECK : IF6B03 DATE : 02/03/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	96	99	99	99	101	99	99	101	102	102	103	101	98	97	99	101	102	100	100	100	101	101	105	100	95	103	98	99	102	104	103	102	101
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0301	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0302	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	95	95	95	----	100	98	98	107	----	----	----	94	----	----	----	----	----	----	----	----	99	----	----	----	----	----	----	----	----	----
ICSAB	99	98	92	96	95	94	100	99	99	98	108	100	101	104	94	106	98	96	107	103	110	105	52*	99	90	100	97	102	102	102	108	107	105
MRLB0303	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	99	102	101	95	95	96	95	101	102	98	101	100	99	98	98	101	100	100	99	101	102	104	105	97	99	101	99	101	101	102	102	102	100
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0304	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	99	103	108	96	95	96	98	102	103	99	101	99	98	98	97	101	99	99	98	100	101	102	105	97	99	100	98	100	101	102	102	101	100
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0305	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0306	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	100	104	105	96	94	96	97	101	104	99	100	99	98	98	97	100	98	98	98	99	102	102	104	97	99	101	99	101	101	101	101	101	99
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	99	103	112*	93	93	95	99	103	103	99	101	99	97	99	97	104	99	99	97	101	101	105	104	98	99	100	98	101	103	101	101	101	99
CCB4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-02I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-03I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L182-01N	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L182-01K	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	100	105	107	91	91	93	96	101	103	98	103	100	98	100	98	104	101	101	98	101	101	105	104	97	98	100	99	101	103	100	101	101	99
CCB5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Revised Report

IMA016SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA016SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA016SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB005SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	100	106	104	93	91	93	97	101	104	99	102	101	98	99	97	103	101	100	98	101	101	105	102	98	99	99	98	101	102	100	100	100	98
CCB6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB005SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	100	108	102	93	92	94	97	103	104	98	103	100	98	99	97	103	101	101	98	102	102	106	109	96	97	98	97	100	102	100	100	100	99
CCB7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	101	110	102	94	93	95	100	107	104	99	101	100	97	98	96	103	100	100	97	102	101	107	118*	96	98	99	98	100	102	100	101	101	100
CCB8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA014WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA014WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA014WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV9	102	112*	113*	91	87*	90	98	101	103	98	100	101	98	98	99	104	102	102	96	102	102	109	101	95	96	98	100	101	102	100	102	102	100
CCB9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV10	102	113*	114*	90	86*	89*	98	100	103	99	101	100	98	99	98	103	101	101	97	102	101	110	104	95	97	98	100	101	103	99	101	101	99
CCB10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

Revised Report

SDG : _____ UNIT : UG/L SUMMARY of CALIBRATION BLANKS : IF6B03 (SOIL) DATE : 02/03/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	.060	.007	.093	-13.6	1.07	1.61	.816	-.689	-1.51	6.18	-.030	.009	.024	.120	9.51	-.000	.038	-.019	.056	.051	.089	.015	-.007	.294	.002	.019	.151	.078	.011	.037	.057	.023	.052
MRLB0301	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0302	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	.436	.012	.383	----	----	----	5.23	----	----	----	----	.137	1.26	.291	----	.319	.197	.585	2.57	.212	.049	.646	.915	----	.022	.263	.094	.045	.083	.135	.010	.225	.005
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0303	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	.053	.004	-.057	-17.3	1.33	1.80	.644	-.791	2.66	5.94	.005	.034	.021	.056	8.91	-.012	.028	-.017	.031	.051	.067	.009	-.008	.319	.001	.019	.095	.064	.013	.018	.048	.019	.041
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA012WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0304	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.129	.002	1.22	-15.4	2.21	1.81	6.04	.852	6.49	6.88	-.047	.062	.017	.064	9.56	-.008	.023	-.021	.019	.066	.073	.020	-.005	.188	.000	.014	.088	.090	.013	.010	.046	.015	.041
A165-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A165-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0305	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB0306	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	.107	-.000	.611	-15.1	1.92	1.83	2.48	.880	5.09	6.46	-.043	.066	.016	.076	8.93	-.008	-.007	-.023	.003	.054	.085	.018	-.009	.183	-.000	.023	.098	.062	.021	.012	.049	.017	.041
A086-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A086-01S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB4	.006	.003	2.47	5.54	1.69	1.51	1.36	-.273	9.34	5.83	-.068	.083	.010	.039	7.70	-.018	-.029	.018	.032	.042	.071	.016	-.007	.160	.001	.014	.098	.062	.003	.011	.045	.015	.038
A135-01I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-02I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A135-03I	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L182-01N	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
L182-01K	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB5	.156	.002	1.01	-9.41	1.84	1.91	1.20	-.913	10.2	6.41	-.047	.048	.024	.096	9.10	-.005	.013	-.018	.067	.073	.079	.018	-.007	.194	.000	.024	.099	.062	.018	.012	.051	.020	.043

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IMA016SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA016SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA016SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A151-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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IMB005SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB6	.108	.006	.463	-14.4	1.62	1.83	.800	-.665	11.8	6.10	-.051	.049	.017	.070	8.48	-.007	-.000	-.024	.056	.062	.112	.015	-.010	.158	.002	.015	.096	.060	.017	.009	.055	.019	.039
IMB005SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB7	.140	.002	.066	-17.0	.519	1.16	1.06	2.89	16.1	2.59	-.029	.041	.006	.030	7.35	-.022	.021	-.032	-.116	.053	.083	.003	-.001	.174	-.000	.022	.085	.051	.002	.010	.032	.011	.034
B012-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-09D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
8012-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B012-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB8	.120	.003	.001	-18.1	.491	1.02	1.92	7.48	22.1	2.32	-.064	.108	.009	.024	6.70	-.016	.011	-.043	-.086	.046	.069	-.002	.005	.158	.000	.021	.092	.052	-.002	.006	.030	.014	.031
IMA014WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA014WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMA014WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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CCV9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB9	.168	.006	1.45	-19.1	1.80	.974	.979	3.46	16.1	4.60	.119	.076	.008	.067	7.79	-.023	-.009	-.037	-.063	.074	.093	.009	-.008	.155	.002	.008	.094	.081	-.001	.007	.034	.008	.032
A183-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A183-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB10	.186	.010	1.81	-21.9	1.27	.928	1.12	3.23	18.0	3.17	.002	.050	.006	.043	6.98	-.020	.021	-.038	-.092	.076	.062	.009	-.011	.147	-.000	.012	.085	.073	.005	.009	.032	.009	.029

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6B03001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6B03002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	F6B03003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1102	F6B03004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	F6B03005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	F6B03006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	F6B03007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	F6B03008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	F6B03009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1102	F6B03010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B03011	MRLB0301	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	F6B03012	MRLB0302	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	F6B03013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	F6B03014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	F6B03015	MRLB0303	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03018	BLANK		1.000				
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBW	2101	F6B03019	IMA012WB		1.000				
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2102	F6B03020	IMA012WL		1.000				
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2103	F6B03021	IMA012WC		1.000				
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2104	F6B03022	A165-01A		1.000				
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2105	F6B03023	A165-01		1.000				
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2106	F6B03024	A165-01J		5.000				
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03025	BLANK		1.000				
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B03026	MRLB0304	1/100/10 ppb	1.000				
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03027	CCV2		1.000				
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03028	CCB2		1.000				
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2107	F6B03029	A165-01A		5.000				
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2108	F6B03030	A165-01I		5.000				
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2109	F6B03031	A165-01J		25.00				
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03032	BLANK		1.000				
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B03033	MRLB0305	1/100/10 ppb	1.000				
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	F6B03034	MRLB0306	500 ppb CAT	1.000				
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03035	CCV3		1.000				
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03036	CCB3		1.000				

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	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
42	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2201	F6B03037	A086-01A		5.000				
43	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2202	F6B03038	A086-01I		5.000				
44	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2203	F6B03039	A086-01J		25.00				
45	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2204	F6B03040	A086-01M		5.000				
46	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2205	F6B03041	A086-01S		5.000				
47	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03042	BLANK		1.000				
48	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03043	BLANK		1.000				
49	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03044	CCV4		1.000				
50	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03045	CCB4		1.000				
51	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2110	F6B03046	A135-01I		10.00				
52	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2111	F6B03047	A135-02I		10.00				
53	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2112	F6B03048	A135-03I		10.00				
54	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2206	F6B03049	L182-01N		1.000				
55	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2207	F6B03050	L182-01K		10.00				
56	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03051	BLANK		1.000				
57	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03052	CCV5		1.000				
58	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03053	CCB5		1.000				
59	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2208	F6B03054	IMA016SB		1.000				
60	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2209	F6B03055	IMA016SL		1.000				
61	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2210	F6B03056	IMA016SC		1.000				
62	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2211	F6B03057	A151-01M		1.000				
63	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2212	F6B03058	A151-01S		1.000				
64	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2301	F6B03059	A151-01A		1.000				
65	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2302	F6B03060	A151-01		1.000				
66	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2303	F6B03061	A151-01J		5.000				
67	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03062	BLANK		1.000				
68	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2304	F6B03063	IMB005SB		1.000				
69	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03064	CCV6		1.000				
70	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03065	CCB6		1.000				
71	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2305	F6B03066	IMB005SL		1.000				
72	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2306	F6B03067	B012-01		1.000				
73	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2307	F6B03068	B012-02		1.000				
74	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2308	F6B03069	B012-03		1.000				
75	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2309	F6B03070	B012-04		1.000				
76	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2310	F6B03071	B012-05		1.000				
77	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2311	F6B03072	B012-06		1.000				
78	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2312	F6B03073	B012-07		1.000				
79	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2401	F6B03074	B012-08		1.000				
80	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03075	BLANK		1.000				
81	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03076	CCV7		1.000				
82	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03077	CCB7		1.000				

Revised Report

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
83	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2402	F6B03078	B012-09	LW 2/11/16	1.000				
84	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2403	F6B03079	B012-10M	renamed as B012-09M	1.000	per client request			
85	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2404	F6B03080	B012-10A	B012-09A	1.000				
86	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2405	F6B03081	B012-10	B012-09	1.000		LW 2/11/16		
87	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2406	F6B03082	B012-10J	B012-09J	5.000				
88	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2407	F6B03083	B012-10D	B012-09D	1.000				
89	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2408	F6B03084	B012-11		1.000				
90	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2409	F6B03085	B012-12		1.000				
91	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2410	F6B03086	B012-13		1.000				
92	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03087	BLANK		1.000				
93	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03088	CCV8		1.000				
94	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03089	CCB8		1.000				
95	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2411	F6B03090	IMA014WB		1.000				
96	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2412	F6B03091	IMA014WL		1.000				
97	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2501	F6B03092	IMA014WC		1.000				
98	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2502	F6B03093	A183-06M	Fe 7 hi cal	1.000				
99	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2503	F6B03094	A183-06S		1.000				
100	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2504	F6B03095	A183-06A	As, Mn failed	1.000				
101	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2505	F6B03096	A183-06		1.000				
102	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2506	F6B03097	A183-06J		1.000				
103	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2507	F6B03098	A183-01		1.000				
104	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03099	BLANK		1.000				
105	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03100	CCV9		1.000				
106	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03101	CCB9		1.000				
107	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2508	F6B03102	A183-02		1.000				
108	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2509	F6B03103	A183-03		1.000				
109	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2510	F6B03104	A183-05		1.000				
110	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2511	F6B03105	A183-07		1.000				
111	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2512	F6B03106	A183-09		1.000				
112	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B03107	BLANK		1.000				
113	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B03108	CCV10		1.000				
114	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1102	F6B03109	CCB10		1.000				
115		Keyword		StandBy							
116		Keyword		SMPLEND	End of SMPL						
117		Keyword		End	End of Sequence						
118		Keyword		CCVBEG	Start of CCV						
119		Keyword		CCVEND	End of CCV						
120		Keyword		BLKBEG	Start of BLANK						
121		Keyword		BLKEND	End of BLANK						
122		Keyword		ERRBEG	Start of ERRTERM						
123		Keyword		ERREND	End of ERRTERM						

Revised Report

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Last Calib: Feb 03, 2016 01:48 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62016\b\if6b03.b\f6b03004.d\f6b03004.d#	S0	Feb 3 2016 01:29 pm
2	c:\data\if62016\b\if6b03.b\f6b03005.d\f6b03005.d#	S1 0.5	Feb 3 2016 01:33 pm
3	c:\data\if62016\b\if6b03.b\f6b03006.d\f6b03006.d#	S2 50	Feb 3 2016 01:38 pm
4	c:\data\if62016\b\if6b03.b\f6b03007.d\f6b03007.d#	S3 250	Feb 3 2016 01:42 pm
5	c:\data\if62016\b\if6b03.b\f6b03008.d\f6b03008.d#	S4 500	Feb 3 2016 01:46 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62016\B\IF6B03.B\EMX6020H.C

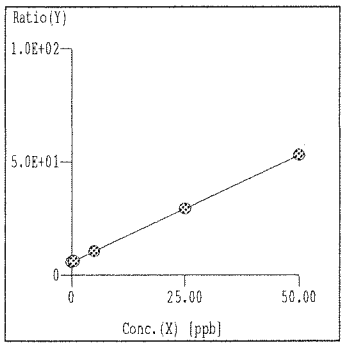
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

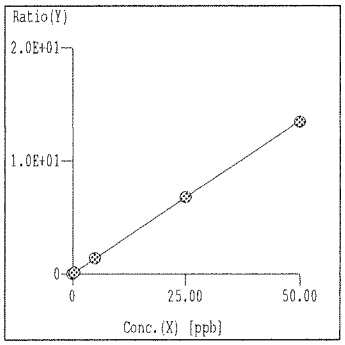
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 7 Li	6	ppb



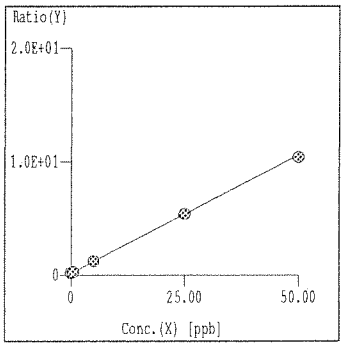
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.439E-001*X +5.737E+000
X = 1.059E+000*Y -6.078E+000
DL = 2.368E-01 ppb
BEC = 6.078 ppb

Step Mass Element	ISTD	Unit
(3) 9 Be	6	ppb



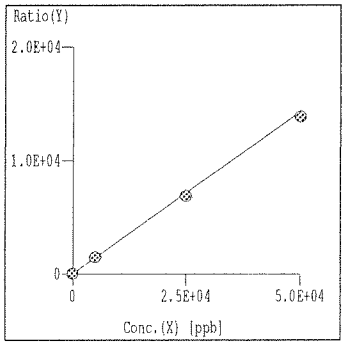
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.710E-001*X +2.932E-003
X = 3.690E+000*Y -1.082E-002
DL = 6.431E-03 ppb
BEC = 1.082E-02 ppb

Step Mass Element	ISTD	Unit
(3) 11 B	6	ppb



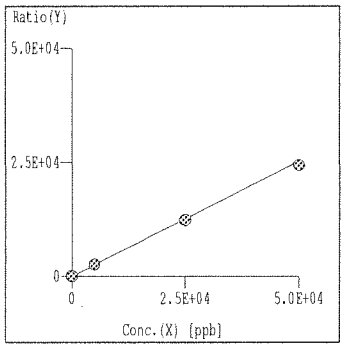
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.090E-001*X +1.577E-001
X = 4.785E+000*Y -7.547E-001
DL = 1.687E-01 ppb
BEC = 7.547E-01 ppb

Step Mass Element	ISTD	Unit
(1) 23 Na	45	ppb



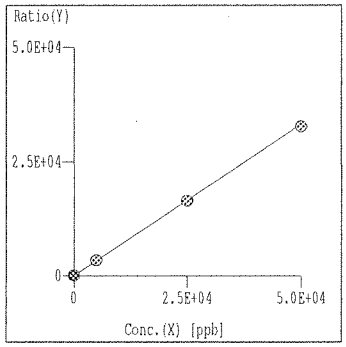
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.864E-001*X +1.339E+001
X = 3.491E+000*Y -4.675E+001
DL = 2.044 ppb
BEC = 46.75 ppb

Step Mass Element	ISTD	Unit
(3) 24 Mg	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.060E-001*X +1.035E+000
X = 1.976E+000*Y -2.045E+000
DL = 4.846E-02 ppb
BEC = 2.045 ppb

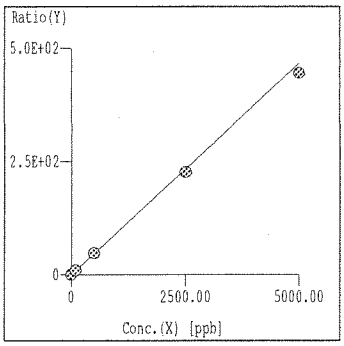
Step Mass Element	ISTD	Unit
(3) 27 Al	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.646E-001*X +2.389E-001
X = 1.505E+000*Y -3.595E-001
DL = 4.466E-02 ppb
BEC = 3.595E-01 ppb

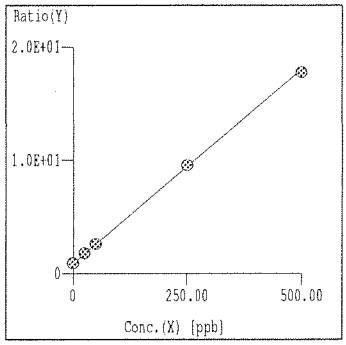
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(1)	28	Si	45	ppb



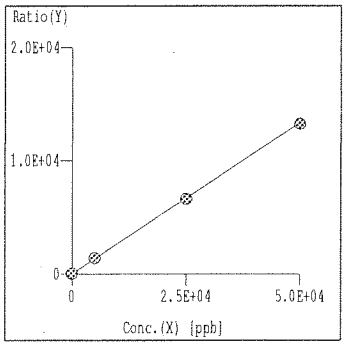
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.345E-002*X +1.119E-001
X = 1.070E+001*Y -1.197E+000
DL = 1.159E-01 ppb
BEC = 1.197 ppb

Step	Mass	Element	ISTD	Unit
(3)	31	P	45	ppb



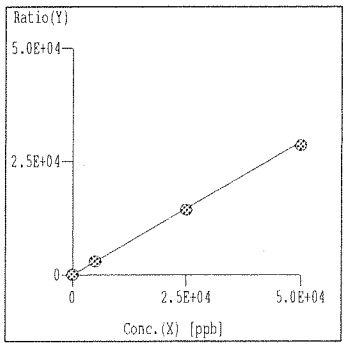
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.430E-002*X +8.842E-001
X = 2.916E+001*Y -2.578E+001
DL = 7.317E-01 ppb
BEC = 25.78 ppb

Step	Mass	Element	ISTD	Unit
(2)	39	K	45	ppb



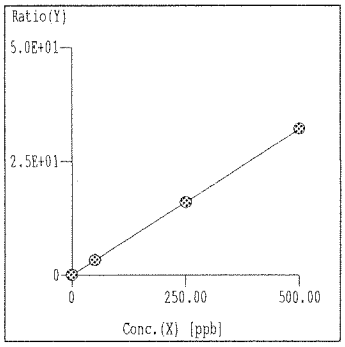
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.671E-001*X +1.970E+001
X = 3.744E+000*Y -7.377E+001
DL = 3.600 ppb
BEC = 73.77 ppb

Step	Mass	Element	ISTD	Unit
(1)	40	Ca	45	ppb



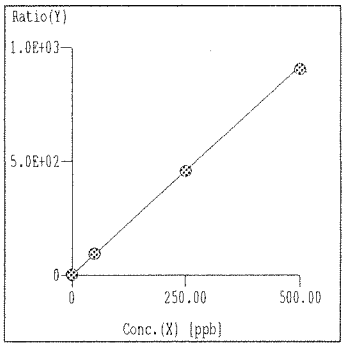
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.862E-001*X +3.983E+000
X = 1.706E+000*Y -6.794E+000
DL = 4.178E-02 ppb
BEC = 6.794 ppb

Step	Mass	Element	ISTD	Unit
(3)	47	Ti	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.409E-002*X +7.904E-003
X = 1.560E+001*Y -1.233E-001
DL = 6.949E-02 ppb
BEC = 1.233E-01 ppb

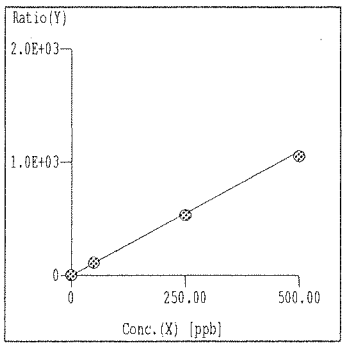
Step	Mass	Element	ISTD	Unit
(2)	51	V	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.837E+000*X +9.398E-001
X = 5.444E-001*Y -5.116E-001
DL = 4.754E-02 ppb
BEC = 5.116E-01 ppb

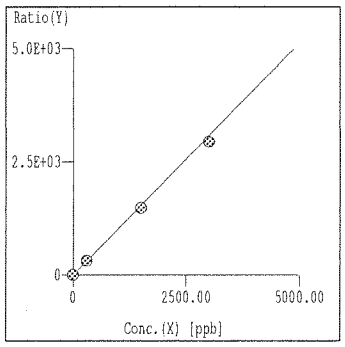
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(2) 52 Cr	45	ppb



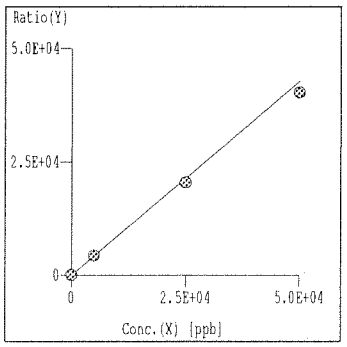
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.192E+000*X +1.720E-001
X = 4.562E-001*Y -7.846E-002
DL = 1.126E-02 ppb
BEC = 7.846E-02 ppb

Step Mass Element	ISTD	Unit
(3) 55 Mn	45	ppb



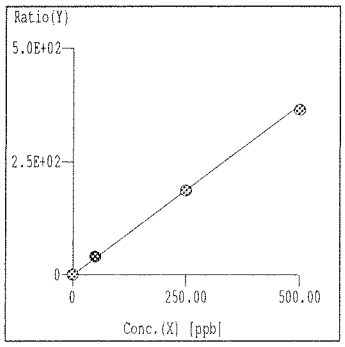
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.028E+000*X +2.441E-001
X = 9.728E-001*Y -2.375E-001
DL = 1.414E-02 ppb
BEC = 2.375E-01 ppb

Step Mass Element	ISTD	Unit
(1) 56 Fe	45	ppb



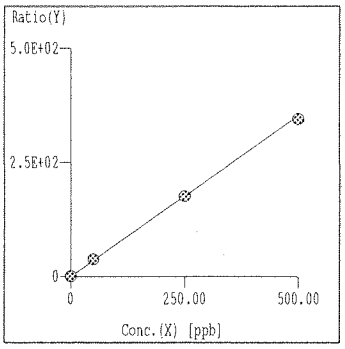
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.563E-001*X +1.385E+000
X = 1.168E+000*Y -1.618E+000
DL = 5.000E-02 ppb
BEC = 1.618 ppb

Step Mass Element	ISTD	Unit
(3) 59 Co	45	ppb



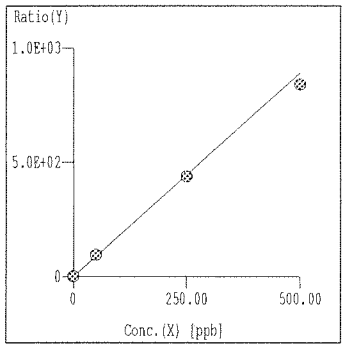
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.505E-001*X +4.378E-002
X = 1.332E+000*Y -5.834E-002
DL = 6.045E-03 ppb
BEC = 5.834E-02 ppb

Step Mass Element	ISTD	Unit
(2) 60 Ni	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 7.059E-001*X +1.105E-001
X = 1.417E+000*Y -1.565E-001
DL = 3.966E-02 ppb
BEC = 1.565E-01 ppb

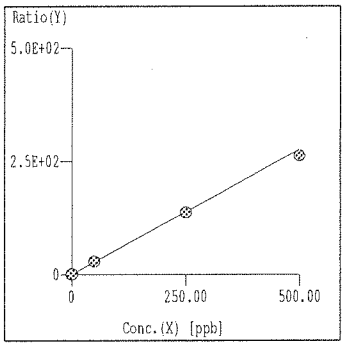
Step Mass Element	ISTD	Unit
(2) 63 Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.784E+000*X +1.646E-001
X = 5.606E-001*Y -9.229E-002
DL = 1.154E-02 ppb
BEC = 9.229E-02 ppb

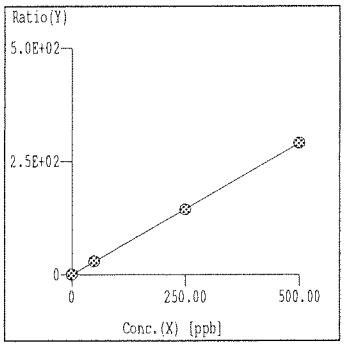
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 66 Zn	72	ppb



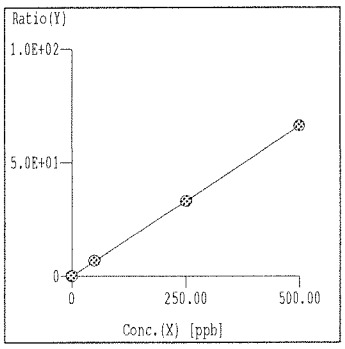
Curve Fit: Y=aX+b
r = 0.9998
Y = 5.531E-001*X +2.243E-001
X = 1.808E+000*Y -4.056E-001
DL = 1.466E-02 ppb
BEC = 4.056E-01 ppb

Step Mass Element	ISTD	Unit
(2) 75 As	72	ppb



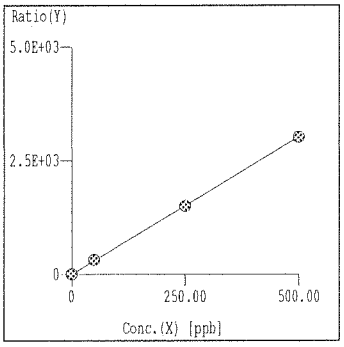
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.801E-001*X +6.829E-002
X = 1.724E+000*Y -1.177E-001
DL = 3.116E-02 ppb
BEC = 1.177E-01 ppb

Step Mass Element	ISTD	Unit
(1) 78 Se	72	ppb



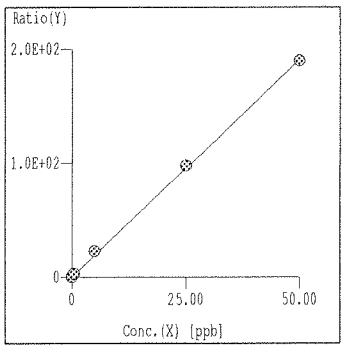
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.323E-001*X +1.515E-003
X = 7.558E+000*Y -1.145E-002
DL = 1.110E-02 ppb
BEC = 1.145E-02 ppb

Step Mass Element	ISTD	Unit
(3) 88 Sr	72	ppb



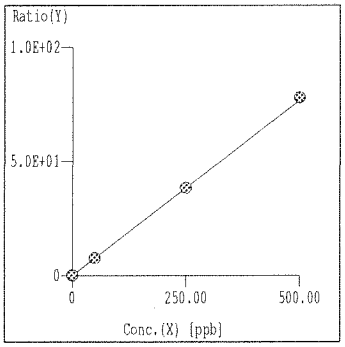
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.049E+000*X +1.723E-001
X = 1.653E-001*Y -2.849E-002
DL = 2.588E-03 ppb
BEC = 2.849E-02 ppb

Step Mass Element	ISTD	Unit
(3) 90 Zr	72	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 3.815E+000*X +9.366E-002
X = 2.621E-001*Y -2.455E-002
DL = 7.361E-03 ppb
BEC = 2.455E-02 ppb

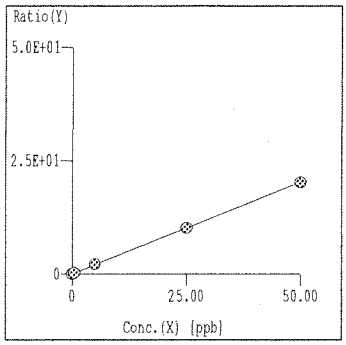
Step Mass Element	ISTD	Unit
(3) 95 Mo	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.534E-001*X +1.244E-003
X = 6.521E+000*Y -8.111E-003
DL = 4.635E-03 ppb
BEC = 8.111E-03 ppb

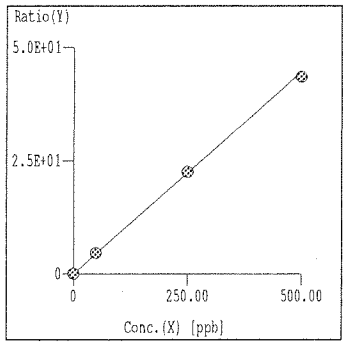
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 107 Ag	115	ppb



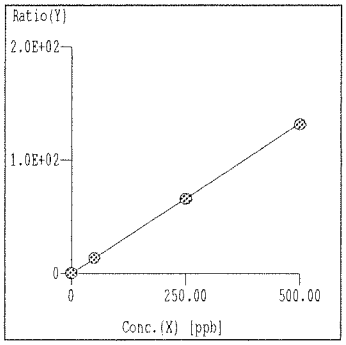
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.070E-001*X +1.524E-003
X = 2.457E+000*Y -3.745E-003
DL = 9.317E-04 ppb
BEC = 3.745E-03 ppb

Step Mass Element	ISTD	Unit
(3) 111 Cd	115	ppb



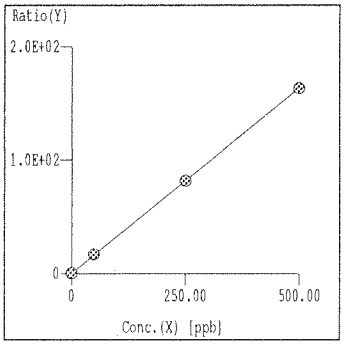
Curve Fit: Y=aX+b
r = 0.9998
Y = 8.947E-002*X +2.559E-005
X = 1.118E+001*Y -2.860E-004
DL = 3.634E-03 ppb
BEC = 2.860E-04 ppb

Step Mass Element	ISTD	Unit
(3) 118 Sn	115	ppb



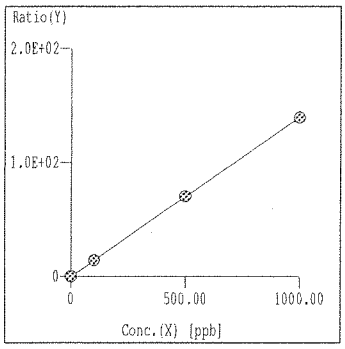
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.650E-001*X +3.801E-003
X = 3.774E+000*Y -1.434E-002
DL = 7.133E-03 ppb
BEC = 1.434E-02 ppb

Step Mass Element	ISTD	Unit
(3) 121 Sb	115	ppb



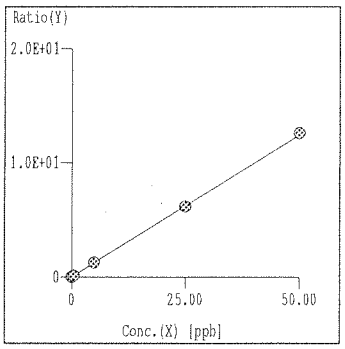
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.278E-001*X +1.572E-002
X = 3.051E+000*Y -4.797E-002
DL = 9.458E-03 ppb
BEC = 4.797E-02 ppb

Step Mass Element	ISTD	Unit
(3) 137 Ba	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.399E-001*X +6.171E-003
X = 7.146E+000*Y -4.410E-002
DL = 1.720E-02 ppb
BEC = 4.410E-02 ppb

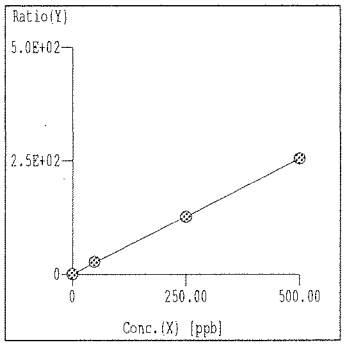
Step Mass Element	ISTD	Unit
(3) 182 W	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 2.487E-001*X +6.604E-003
X = 4.022E+000*Y -2.656E-002
DL = 4.347E-03 ppb
BEC = 2.656E-02 ppb

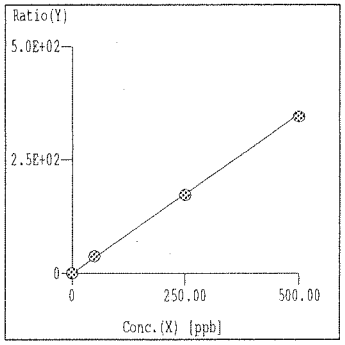
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



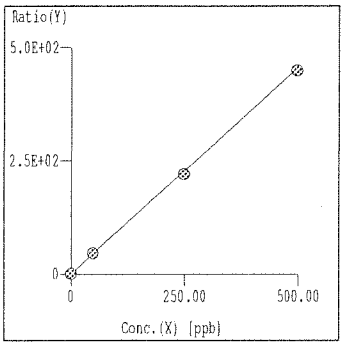
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.085E-001*X +1.641E-003
X = 1.967E+000*Y -3.227E-003
DL = 8.055E-04 ppb
BEC = 3.227E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 7.010E-001*X +1.124E-002
X = 1.427E+000*Y -1.603E-002
DL = 2.134E-03 ppb
BEC = 1.603E-02 ppb

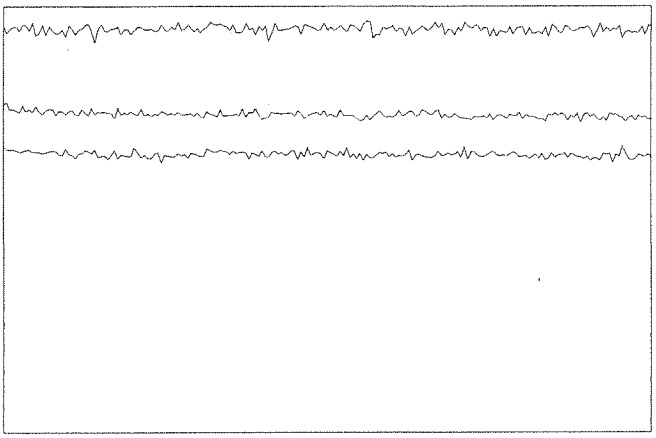
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 9.144E-001*X +1.040E-003
X = 1.094E+000*Y -1.138E-003
DL = 5.559E-04 ppb
BEC = 1.138E-03 ppb

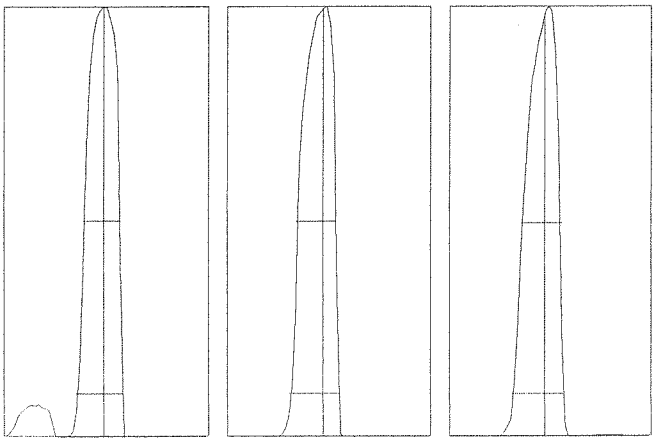
Tune Report

Tune File : NORM.U
Comment : IF6B03



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.651%
Doubly Charged:	70/140	0.947%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	19058.0	18919.9	0.97	11.30
89	50,000	36763.0	37320.6	1.07	1.90
205	50,000	32342.0	32657.2	1.16	6.80
156/140	5	1.762%	1.709%	4.78	
70/140	2	0.894%	0.928%	5.82	



m/z:	7	89	205
Height:	18,961	37,248	32,788
Axis:	7.00	88.95	204.95
W-50%:	0.55	0.60	0.60
W-10%:	0.700	0.7500	0.800

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : Feb 03, 2016 12:59:33
Printed : Feb 03, 2016 12:59:36

Tune Report

Tune File : NORM.U
Comment : IF6B03

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	: 1500	W	Extract 1	: 0	V	AMU Gain	: 128	
RF Matching	: 1.74	V	Extract 2	: -140	V	AMU Offset	: 126	
Smpl Depth	: 8	mm	Omega Bias-ce	: -20	V	Axis Gain	: 0.9995	
Torch-H	: -0.7	mm	Omega Lens-ce	: 1.8	V	Axis Offset	: -0.05	
Torch-V	: 0.5	mm	Cell Entrance	: -30	V	QP Bias	: -3	V
Carrier Gas	: 0.9	L/min	QP Focus	: 2	V			
Makeup Gas	: 0.15	L/min	Cell Exit	: -36	V	===Detector Parameters===		
Optional Gas	: ---	%				Discriminator	: 8	mV
Nebulizer Pump	: 0.1	rps	===Octopole Parameters===			Analog HV	: 2120	V
Sample Pump	: ---	rps	OctP RF	: 169	V	Pulse HV	: 1430	V
S/C Temp	: 2	degC	OctP Bias	: -8	V			

===Reaction Cell===								
Reaction Mode	: OFF							
H2 Gas	: 0	mL/min	He Gas	: 0	mL/min	Optional Gas	: ---	%

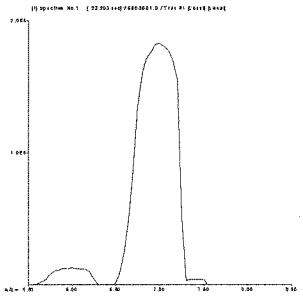
Generated : Feb 03, 2016 12:59:33
Printed : Feb 03, 2016 12:59:38

6020 QC Tune Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03001.D
Date Acquired:	Feb 3 2016 01:15 pm
Acq. Method:	TN6020_C.M
Operator:	CCapul
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	0.66	5.00	
59 Co	0.41	5.00	
115 In	0.19	5.00	
205 Tl	1.22	5.00	



7 Li

Mass Calib.

Actual: 7.00

Required: 6.90 - 7.10

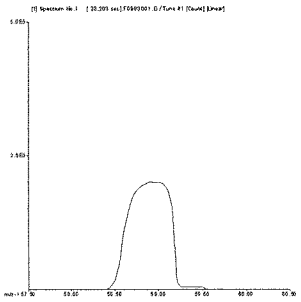
Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:



59 Co

Mass Calib.

Actual: 58.95

Required: 58.90 - 59.10

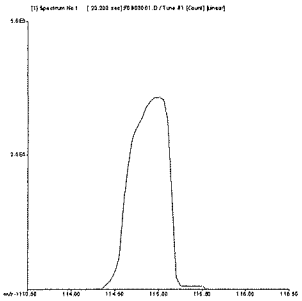
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



115 In

Mass Calib.

Actual: 114.95

Required: 114.90 - 115.10

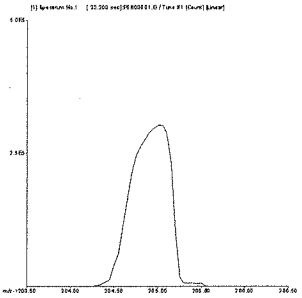
Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

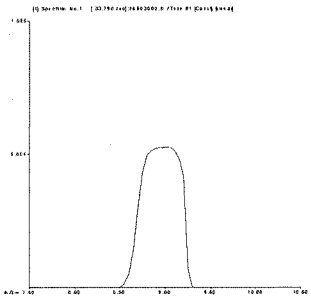
Flag:

200.8 QC Tune Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03002.D
Date Acquired:	Feb 3 2016 01:19 pm
Acq. Method:	TN200_8C.M
Operator:	CCapul
Sample Name:	200.8tunchk
Misc Info:	
Vial Number:	1302
Current Method:	C:\ICPCHEM\1\METHODS\TN200_8C.M

RSD (%)

Element	Actual	Required	Flag
9 Be	0.22	5.00	
24 Mg	0.78	5.00	
59 Co	0.77	5.00	
115 In	0.81	5.00	
208 Pb	1.08	5.00	



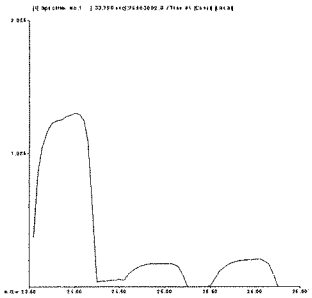
9 Be

Mass Calib.

Actual:	8.95	
Required:	8.90 -	9.10
Flag:		

Peak Width-5%

Actual:	0.65
Limit	0.75
Flag:	



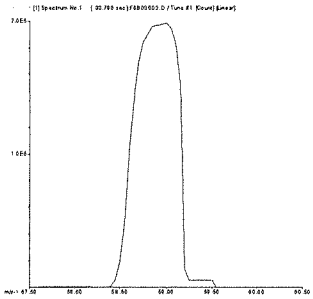
24 Mg

Mass Calib.

Actual:	23.95	
Required:	23.90 -	24.10
Flag:		

Peak Width-5%

Actual:	0.65
Limit	0.75
Flag:	



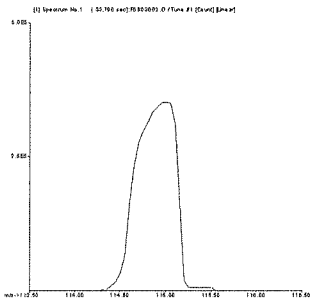
59 Co

Mass Calib.

Actual:	58.95	
Required:	58.90 -	59.10
Flag:		

Peak Width-5%

Actual:	0.60
Limit	0.75
Flag:	



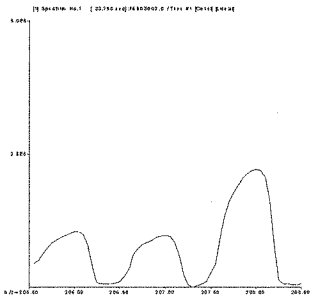
115 In

Mass Calib.

Actual:	114.95	
Required:	114.90 -	115.10
Flag:		

Peak Width-5%

Actual:	0.60
Limit	0.75
Flag:	



208 Pb

Mass Calib.

Actual:	208.00	
Required:	207.90 -	208.10
Flag:		

Peak Width-5%

Actual:	0.65
Limit	0.75
Flag:	

Tune Result: Pass

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03003
Date Acquired:	Feb 3 2016 01:24 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H
Last Cal Update:	Feb 03 2016 01:27 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1901884.00	A	25980.00	1.37
7	Li	110307.70	P	1073.00	0.97
9	Be	100.00	P	23.09	23.09
11	B	4416.35	P	90.10	2.04
23	Na	110273.20	P	1517.00	1.38
24	Mg	28370.03	P	527.70	1.86
27	Al	12404.46	P	167.50	1.35
28	Si	1214.54	P	81.48	6.71
31	P	19948.62	P	373.50	1.87
39	K	33954.04	P	67.96	0.20
40	Ca	64584.91	P	342.20	0.53
45	Sc	860576.69	A	4417.00	0.51
45	Sc	178605.70	P	1342.00	0.75
45	Sc	2275320.00	A	16860.00	0.74
47	Ti	102.23	P	13.88	13.58
51	V	1717.00	P	33.91	1.98
52	Cr	374.01	P	13.32	3.56
55	Mn	5760.22	P	30.99	0.54
56	Fe	17657.88	P	292.20	1.65
59	Co	593.37	P	55.08	9.28
60	Ni	174.89	P	7.34	4.20
63	Cu	189.56	P	13.00	6.86
66	Zn	1711.27	P	106.30	6.21
72	Ge	218457.70	P	1619.00	0.74
72	Ge	92474.46	P	745.60	0.81
72	Ge	483584.91	P	1729.00	0.36
75	As	64.45	P	13.68	21.23
78	Se	3.78	P	2.14	56.73
88	Sr	1090.08	P	50.34	4.62
90	Zr	462.25	P	45.99	9.95
95	Mo	96.67	P	17.64	18.25
107	Ag	51.11	P	5.09	9.96
111	Cd	21.80	P	7.48	34.33
115	In	3511098.00	A	25580.00	0.73
118	Sn	195.56	P	12.62	6.45
121	Sb	607.81	P	6.94	1.14
137	Ba	248.90	P	28.74	11.55
159	Tb	5484807.00	A	43990.00	0.80
182	W	462.25	P	22.69	4.91
205	Tl	650.04	P	33.83	5.20
208	Pb	1087.84	P	94.31	8.67
209	Bi	3516503.00	A	37740.00	1.07
235	U	7.78	P	5.09	65.47
238	U	208.90	P	30.97	14.83

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03004
Date Acquired:	Feb 3 2016 01:29 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1102
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H
Last Cal Update:	Feb 03 2016 01:27 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1796884.00	A	27300.00	1.52
7	Li	103528.20	P	749.70	0.72
9	Be	52.22	P	10.18	19.49
11	B	2938.16	P	167.40	5.70
23	Na	110215.00	P	924.40	0.84
24	Mg	22193.93	P	199.80	0.90
27	Al	5117.73	P	158.80	3.10
28	Si	908.95	P	35.95	3.96
31	P	19285.48	P	86.96	0.45
39	K	32899.39	P	282.40	0.86
40	Ca	32428.52	P	305.90	0.94
45	Sc	814426.31	A	6122.00	0.75
45	Sc	168587.50	P	1343.00	0.80
45	Sc	2150313.00	A	23170.00	1.08
47	Ti	105.56	P	30.97	29.34
51	V	1530.76	P	60.78	3.97
52	Cr	283.12	P	16.01	5.65
55	Mn	5104.42	P	52.93	1.04
56	Fe	11233.60	P	68.69	0.61
59	Co	470.03	P	37.12	7.90
60	Ni	163.11	P	16.02	9.82
63	Cu	95.78	P	11.86	12.38
66	Zn	1027.85	P	9.62	0.94
72	Ge	207507.70	P	329.00	0.16
72	Ge	87108.25	P	291.00	0.33
72	Ge	458551.59	P	1667.00	0.36
75	As	51.78	P	5.43	10.49
78	Se	3.11	P	1.02	32.72
88	Sr	751.16	P	21.69	2.89
90	Zr	347.79	P	41.68	11.98
95	Mo	47.78	P	7.70	16.11
107	Ag	48.89	P	3.85	7.87
111	Cd	0.71	P	3.59	508.56
115	In	3329821.00	A	34600.00	1.04
118	Sn	121.12	P	20.37	16.82
121	Sb	485.58	P	30.25	6.23
137	Ba	104.45	P	27.15	25.99
159	Tb	5173019.00	A	23770.00	0.46
182	W	346.68	P	20.27	5.85
205	Tl	82.23	P	6.94	8.44
208	Pb	556.69	P	23.33	4.19
209	Bi	3348484.00	A	22050.00	0.66
235	U	6.67	P	6.67	100.00
238	U	53.34	P	8.82	16.54

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03005.D\F6B03005.D#
Date Acquired: Feb 3 2016 01:33 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:32 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1852657.00	A	17150.00	0.93
7 Li	114975.50	P	776.50	0.68
9 Be	2553.64	P	132.10	5.17
11 B	4615.32	P	45.40	0.98
23 Na	171399.80	P	922.20	0.54
24 Mg	637397.50	P	2791.00	0.44
27 Al	791269.69	M	14170.00	1.79
28 Si	80203.59	P	467.40	0.58
31 P	39333.25	P	524.50	1.33
39 K	57994.28	P	823.80	1.42
40 Ca	287833.09	P	1031.00	0.36
45 Sc	843590.88	A	7307.00	0.87
45 Sc	173628.80	P	645.20	0.37
45 Sc	2206805.00	A	25400.00	1.15
47 Ti	944.51	P	24.57	2.60
51 V	3294.61	P	61.36	1.86
52 Cr	2287.30	P	43.37	1.90
55 Mn	17855.88	P	106.80	0.60
56 Fe	430489.81	P	844.80	0.20
59 Co	10333.99	P	103.40	1.00
60 Ni	869.59	P	28.48	3.28
63 Cu	1880.13	P	8.35	0.44
66 Zn	3421.63	P	112.90	3.30
72 Ge	216138.09	P	1204.00	0.56
72 Ge	89782.62	P	276.50	0.31
72 Ge	468308.41	P	50.40	0.01
75 As	329.78	P	6.30	1.91
78 Se	152.00	P	15.07	9.91
88 Sr	15937.17	P	120.40	0.76
90 Zr	13641.40	P	416.50	3.05
95 Mo	2598.11	P	22.20	0.85
107 Ag	7247.65	P	76.21	1.05
111 Cd	1651.99	P	131.20	7.94
115 In	3417850.00	A	12970.00	0.38
118 Sn	4833.22	P	116.50	2.41
121 Sb	6456.19	P	88.36	1.37
137 Ba	2700.36	P	23.33	0.86
159 Tb	5324036.00	A	45140.00	0.85
182 W	6373.94	P	262.70	4.12
205 Tl	16086.96	P	83.67	0.52
208 Pb	22398.26	P	199.80	0.89
209 Bi	3467603.00	A	10370.00	0.30
235 U	187.79	P	27.15	14.46
238 U	26295.04	P	593.40	2.26

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1852657.30	0.93	1796883.80	103.1	60 - 125	
45 Sc	843590.94	0.87	814426.31	103.6	60 - 125	
45 Sc	173628.81	0.37	168587.55	103.0	60 - 125	
45 Sc	2206804.50	1.15	2150312.80	102.6	60 - 125	
72 Ge	216138.11	0.56	207507.67	104.2	60 - 125	
72 Ge	89782.62	0.31	87108.25	103.1	60 - 125	
72 Ge	468308.44	0.01	458551.66	102.1	60 - 125	
115 In	3417850.00	0.38	3329821.00	102.6	60 - 125	
159 Tb	5324036.00	0.85	5173018.50	102.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03006.D\F6B03006.D#
Date Acquired: Feb 3 2016 01:38 pm
Operator: CCapul
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:36 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1793263.00	A	5037.00	0.28
7 Li	187679.59	P	770.80	0.41
9 Be	24443.74	P	127.20	0.52
11 B	21989.96	P	108.90	0.50
23 Na	12302840.00	A	78300.00	0.64
24 Mg	56980608.00	A	120900.00	0.21
27 Al	75019368.00	A	156000.00	0.21
28 Si	398879.00	P	3356.00	0.84
31 P	57459.64	P	167.70	0.29
39 K	2395267.00	A	12200.00	0.51
40 Ca	24833000.00	A	165800.00	0.67
45 Sc	842339.31	A	8562.00	1.02
45 Sc	172833.59	P	861.80	0.50
45 Sc	2219394.00	A	3303.00	0.15
47 Ti	72218.46	P	701.10	0.97
51 V	161726.09	P	470.00	0.29
52 Cr	190901.41	P	266.40	0.14
55 Mn	6904684.00	A	5970.00	0.09
56 Fe	36269860.00	A	267500.00	0.74
59 Co	892636.50	M	19340.00	2.17
60 Ni	65173.91	P	135.80	0.21
63 Cu	163912.91	P	441.20	0.27
66 Zn	133731.50	P	300.90	0.23
72 Ge	210060.00	P	1206.00	0.57
72 Ge	88276.73	P	913.50	1.03
72 Ge	463482.41	P	2253.00	0.49
75 As	25990.66	P	111.70	0.43
78 Se	14275.33	P	207.90	1.46
88 Sr	1454696.00	A	12340.00	0.85
90 Zr	104793.60	P	702.60	0.67
95 Mo	256009.50	P	554.60	0.22
107 Ag	70870.18	P	762.60	1.08
111 Cd	153489.59	P	756.40	0.49
115 In	3357955.00	A	14880.00	0.44
118 Sn	453693.59	P	1382.00	0.30
121 Sb	562840.63	P	606.50	0.11
137 Ba	477063.00	P	2565.00	0.54
159 Tb	5284955.00	A	23920.00	0.45
182 W	65921.79	P	544.20	0.83
205 Tl	1429859.00	A	8006.00	0.56
208 Pb	1983019.00	A	9676.00	0.49
209 Bi	3297804.00	A	15570.00	0.47
235 U	14543.04	P	349.80	2.41
238 U	2417701.00	A	12920.00	0.53

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1793263.30	0.28	1796883.80	99.8	60 - 125	
45 Sc	842339.25	1.02	814426.31	103.4	60 - 125	
45 Sc	172833.66	0.50	168587.55	102.5	60 - 125	
45 Sc	2219394.00	0.15	2150312.80	103.2	60 - 125	
72 Ge	210060.02	0.57	207507.67	101.2	60 - 125	
72 Ge	88276.73	1.03	87108.25	101.3	60 - 125	
72 Ge	463482.38	0.49	458551.66	101.1	60 - 125	
115 In	3357954.80	0.44	3329821.00	100.8	60 - 125	
159 Tb	5284955.00	0.45	5173018.50	102.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03007.D\F6B03007.D#
Date Acquired: Feb 3 2016 01:42 pm
Operator: CCapul
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:40 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1665683.00	A	5962.00	0.36
7 Li	486997.19	P	2826.00	0.58
9 Be	112866.20	P	779.80	0.69
11 B	89502.67	P	213.50	0.24
23 Na	57611808.00	A	286100.00	0.50
24 Mg	263080000.00	A	923500.00	0.35
27 Al	350457890.00	A	1273000.00	0.36
28 Si	1894691.00	A	4583.00	0.24
31 P	203041.70	P	643.00	0.32
39 K	10911160.00	A	76090.00	0.70
40 Ca	119572000.00	A	649900.00	0.54
45 Sc	837113.31	A	12480.00	1.49
45 Sc	165364.80	P	890.10	0.54
45 Sc	2131628.00	A	13150.00	0.62
47 Ti	340456.31	P	702.60	0.21
51 V	754965.50	P	1298.00	0.17
52 Cr	875781.31	A	5360.00	0.61
55 Mn	31586900.00	A	108800.00	0.34
56 Fe	171203100.00	A	819800.00	0.48
59 Co	3966422.00	A	31110.00	0.78
60 Ni	290427.19	P	980.70	0.34
63 Cu	723076.31	P	1940.00	0.27
66 Zn	602991.63	P	6118.00	1.01
72 Ge	201925.80	P	348.90	0.17
72 Ge	83273.89	P	198.10	0.24
72 Ge	441619.91	P	1916.00	0.43
75 As	119492.30	P	507.10	0.42
78 Se	66696.54	P	427.50	0.64
88 Sr	6628817.00	A	26850.00	0.41
90 Zr	431213.00	P	1544.00	0.36
95 Mo	1185986.00	A	13590.00	1.15
107 Ag	315599.69	P	1569.00	0.50
111 Cd	698365.13	P	1654.00	0.24
115 In	3100357.00	A	5819.00	0.19
118 Sn	2037249.00	A	14600.00	0.72
121 Sb	2530276.00	A	14200.00	0.56
137 Ba	2175694.00	A	8672.00	0.40
159 Tb	5065535.00	A	16730.00	0.33
182 W	311988.81	P	2829.00	0.91
205 Tl	6384525.00	A	35820.00	0.56
208 Pb	8727998.00	A	39270.00	0.45
209 Bi	3001513.00	A	12780.00	0.43
235 U	68220.05	P	909.40	1.33
238 U	11137930.00	A	90630.00	0.81

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1665682.60	0.36	1796883.80	92.7	60 - 125	
45 Sc	837113.25	1.49	814426.31	102.8	60 - 125	
45 Sc	165364.80	0.54	168587.55	98.1	60 - 125	
45 Sc	2131628.00	0.62	2150312.80	99.1	60 - 125	
72 Ge	201925.80	0.17	207507.67	97.3	60 - 125	
72 Ge	83273.89	0.24	87108.25	95.6	60 - 125	
72 Ge	441619.94	0.43	458551.66	96.3	60 - 125	
115 In	3100356.80	0.19	3329821.00	93.1	60 - 125	
159 Tb	5065534.50	0.33	5173018.50	97.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03008.D\F6B03008.D#
Date Acquired:	Feb 3 2016 01:46 pm
Operator:	CCapul
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update:	Feb 03 2016 01:44 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1624318.00	A	4483.00	0.28
7 Li	861408.13	A	4609.00	0.54
9 Be	217995.70	P	1522.00	0.70
11 B	168718.80	P	1591.00	0.94
23 Na	115476600.00	A	847600.00	0.73
24 Mg	511469890.00	A	1816000.00	0.36
27 Al	686585980.00	A	883500.00	0.13
28 Si	3705557.00	A	20100.00	0.54
31 P	373164.09	P	2846.00	0.76
39 K	21762820.00	A	54770.00	0.25
40 Ca	237450800.00	A	1193000.00	0.50
45 Sc	832957.38	A	2633.00	0.32
45 Sc	164681.00	P	2021.00	1.23
45 Sc	2102221.00	A	12370.00	0.59
47 Ti	674996.00	P	870.90	0.13
51 V	1490315.00	A	2822.00	0.19
52 Cr	1730947.00	A	2307.00	0.13
55 Mn	61819420.00	A	331000.00	0.54
56 Fe	335394910.00	A	1563000.00	0.47
59 Co	7641701.00	A	13080.00	0.17
60 Ni	567733.00	P	1416.00	0.25
63 Cu	1382624.00	A	4229.00	0.31
66 Zn	1131820.00	A	2084.00	0.18
72 Ge	195849.50	P	1195.00	0.61
72 Ge	81586.64	P	1159.00	1.42
72 Ge	432482.50	P	2498.00	0.58
75 As	236813.91	P	985.00	0.42
78 Se	129462.70	P	739.00	0.57
88 Sr	13033760.00	A	50250.00	0.39
90 Zr	820160.81	P	5854.00	0.71
95 Mo	2325497.00	A	5195.00	0.22
107 Ag	604690.31	P	3898.00	0.64
111 Cd	1300985.00	A	5872.00	0.45
115 In	2989437.00	A	12160.00	0.41
118 Sn	3926620.00	A	11440.00	0.29
121 Sb	4878656.00	A	31740.00	0.65
137 Ba	4162302.00	A	19260.00	0.46
159 Tb	4891909.00	A	12350.00	0.25
182 W	615471.00	P	2387.00	0.39
205 Tl	12422460.00	A	52450.00	0.42
208 Pb	16847070.00	A	54990.00	0.33
209 Bi	2867217.00	A	3920.00	0.14
235 U	135817.50	P	779.40	0.57
238 U	21959500.00	A	47990.00	0.22

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1624317.60	0.28	1796883.80	90.4	60 - 125	
45 Sc	832957.44	0.32	814426.31	102.3	60 - 125	
45 Sc	164680.98	1.23	168587.55	97.7	60 - 125	
45 Sc	2102220.50	0.59	2150312.80	97.8	60 - 125	
72 Ge	195849.50	0.61	207507.67	94.4	60 - 125	
72 Ge	81586.64	1.42	87108.25	93.7	60 - 125	
72 Ge	432482.50	0.58	458551.66	94.3	60 - 125	
115 In	2989436.80	0.41	3329821.00	89.8	60 - 125	
159 Tb	4891909.50	0.25	5173018.50	94.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03009.D\F6B03009.D#
Date Acquired:	Feb 3 2016 01:50 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	28.84	ppb	500504.3	0.27	30.00	90 - 110	
9 Be	29.58	ppb	121789.2	0.62	30.00	90 - 110	
11 B	29.74	ppb	96787.1	1.09	30.00	90 - 110	
23 Na	29760.00	ppb	66187648.0	0.63	30000.00	90 - 110	
24 Mg	30160.00	ppb	296695810.0	1.33	30000.00	90 - 110	
27 Al	29560.00	ppb	381974400.0	1.27	30000.00	90 - 110	
28 Si	2980.00	ppb	2160217.0	0.48	3000.00	90 - 110	
31 P	303.00	ppb	219208.3	1.54	300.00	90 - 110	
39 K	30720.00	ppb	12449520.0	1.43	30000.00	90 - 110	
40 Ca	30620.00	ppb	139207010.0	0.39	30000.00	90 - 110	
47 Ti	308.30	ppb	384269.6	0.26	300.00	90 - 110	
51 V	302.40	ppb	842498.1	0.40	300.00	90 - 110	
52 Cr	295.10	ppb	979656.8	0.95	300.00	90 - 110	
55 Mn	1938.00	ppb	38740912.0	0.37	2000.00	90 - 110	
56 Fe	29640.00	ppb	196777500.0	0.56	30000.00	90 - 110	
59 Co	303.10	ppb	4422280.0	1.00	300.00	90 - 110	
60 Ni	307.00	ppb	328269.3	0.57	300.00	90 - 110	
63 Cu	301.10	ppb	813235.6	0.59	300.00	90 - 110	
66 Zn	300.40	ppb	675961.5	0.30	300.00	90 - 110	
75 As	300.80	ppb	133362.3	0.78	300.00	90 - 110	
78 Se	303.50	ppb	74593.3	0.81	300.00	90 - 110	
88 Sr	303.10	ppb	7449396.0	0.66	300.00	90 - 110	
90 Zr	31.35	ppb	486237.6	0.78	30.00	90 - 110	
95 Mo	301.50	ppb	1330560.0	1.04	300.00	90 - 110	
107 Ag	28.53	ppb	334126.2	0.64	30.00	90 - 110	
111 Cd	308.10	ppb	793158.6	0.52	300.00	90 - 110	
118 Sn	293.90	ppb	2241314.0	0.75	300.00	90 - 110	
121 Sb	296.20	ppb	2794284.0	0.35	300.00	90 - 110	
137 Ba	305.10	ppb	1228695.0	0.78	300.00	90 - 110	
182 W	31.07	ppb	364765.1	0.76	30.00	90 - 110	
205 Tl	309.00	ppb	7411976.0	0.17	300.00	90 - 110	
208 Pb	307.40	ppb	10165450.0	0.49	300.00	90 - 110	
235 U	2.35	ppb	98082.2	0.62	2.20	90 - 110	
238 U	304.00	ppb	13113770.0	0.37	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1518591.4	0.22	1796883.80	84.5	60 - 125	
45 Sc	775344.1	0.56	814426.31	95.2	60 - 125	
45 Sc	151390.7	0.67	168587.55	89.8	60 - 125	
45 Sc	1944029.4	0.57	2150312.80	90.4	60 - 125	
72 Ge	185728.3	0.98	207507.67	89.5	60 - 125	
72 Ge	76399.6	0.71	87108.25	87.7	60 - 125	
72 Ge	406196.2	0.56	458551.66	88.6	60 - 125	
115 In	2877672.3	0.42	3329821.00	86.4	60 - 125	
159 Tb	4717030.0	0.38	5173018.50	91.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03010.D\F6B03010.D#
Date Acquired:	Feb 3 2016 01:54 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1102
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0604	ppb	88590.1	147.82	0.20	
9 Be	0.0072	ppb	74.4	13.97	0.10	
11 B	0.0934	ppb	2710.3	63.85	5.00	
23 Na	-13.5500	ppb	71308.1	2.96	40.00	
24 Mg	1.0650	ppb	29674.9	21.61	10.00	
27 Al	1.6070	ppb	24646.8	16.16	20.00	
28 Si	0.8163	ppb	1411.2	6.22	20.00	
31 P	-0.6895	ppb	16231.8	40.62	10.00	
39 K	-1.5100	ppb	28931.0	125.56	20.00	
40 Ca	6.1750	ppb	57019.7	1.81	25.00	
47 Ti	-0.0296	ppb	113.3	26.98	0.50	
51 V	0.0085	ppb	1432.1	135.19	0.50	
52 Cr	0.0237	ppb	335.6	23.81	0.20	
55 Mn	0.1196	ppb	6923.0	22.22	0.20	
56 Fe	9.5090	ppb	71463.0	6.59	10.00	
59 Co	-0.0006	ppb	817.8	579.24	0.20	
60 Ni	0.0378	ppb	205.6	41.44	0.20	
63 Cu	-0.0194	ppb	194.9	23.88	0.40	
66 Zn	0.0561	ppb	1035.6	27.53	2.00	
75 As	0.0506	ppb	75.8	62.35	0.20	
78 Se	0.0891	ppb	24.9	10.97	0.20	
90 Zr	-0.0073	ppb	266.7	16.25	2.00	
95 Mo	0.2942	ppb	1416.8	13.09	0.40	
107 Ag	0.0022	ppb	73.3	124.10	0.20	
111 Cd	0.0193	ppb	53.4	57.54	0.20	
118 Sn	0.1511	ppb	1340.1	9.27	0.20	
121 Sb	0.0778	ppb	1260.1	18.17	0.40	
137 Ba	0.0107	ppb	234.5	48.74	0.20	
182 W	0.0372	ppb	758.9	14.65	1.00	
205 Tl	0.0574	ppb	1475.7	8.50	0.20	
208 Pb	0.0231	ppb	1312.3	23.52	0.10	
235 U	0.0005	ppb	26.7	16.95	1.00	
238 U	0.0520	ppb	2324.7	13.52	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1529010.3	0.57	1796883.80	85.1	60 - 125	
45 Sc	750022.8	0.22	814426.31	92.1	60 - 125	
45 Sc	149902.6	0.56	168587.55	88.9	60 - 125	
45 Sc	1886164.8	0.32	2150312.80	87.7	60 - 125	
72 Ge	187093.8	0.45	207507.67	90.2	60 - 125	
72 Ge	77627.4	0.21	87108.25	89.1	60 - 125	
72 Ge	405519.7	0.42	458551.66	88.4	60 - 125	
115 In	3058564.3	0.95	3329821.00	91.9	60 - 125	
159 Tb	4790954.5	0.60	5173018.50	92.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03011.D\F6B03011.D#
Date Acquired:	Feb 3 2016 01:58 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLB0301
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	101804.4	0.0000	0.9939	ppb	3.29	50.00	
9 Be	# 3	6	4082.9	0.0000	0.9770	ppb	5.77	50.00	
11 B	# 3	6	33726.3	0.0000	9.8260	ppb	0.87	50.00	
23 Na	# 1	45	284336.3	0.0000	86.7300	ppb	1.17	50000.00	
24 Mg	# 3	45	1018984.0	0.0000	103.3000	ppb	1.37	50000.00	
27 Al	# 3	45	1294437.0	0.0000	101.5000	ppb	0.34	50000.00	
28 Si	# 1	45	1131.2	0.0000	0.4303	ppb	6.74	5000.00	
31 P	# 3	45	51645.1	0.0000	52.9900	ppb	1.24	500.00	
39 K	# 2	45	71566.0	0.0000	105.1000	ppb	3.77	50000.00	
40 Ca	# 1	45	490855.8	0.0000	105.8000	ppb	0.46	50000.00	
47 Ti	# 3	45	1533.5	0.0000	1.1280	ppb	3.84	500.00	
51 V	# 2	45	4225.1	0.0000	1.0240	ppb	1.17	500.00	
52 Cr	# 2	45	3570.9	0.0000	1.0090	ppb	0.49	500.00	
55 Mn	# 3	45	26388.9	0.0000	1.1050	ppb	0.97	3000.00	
56 Fe	# 1	45	734423.9	0.0000	113.7000	ppb	0.30	50000.00	
59 Co	# 3	45	16965.9	0.0000	1.1240	ppb	1.29	500.00	
60 Ni	# 2	45	1355.0	0.0000	1.1250	ppb	1.03	500.00	
63 Cu	# 2	45	3077.7	0.0000	1.0600	ppb	1.92	500.00	
66 Zn	# 3	72	24985.5	0.0000	10.8100	ppb	0.19	500.00	
75 As	# 2	72	511.1	0.0000	1.0130	ppb	4.51	500.00	
78 Se	# 1	72	260.7	0.0000	1.0540	ppb	0.88	500.00	
88 Sr	# 3	72	55026.6	0.0000	2.2290	ppb	0.90	500.00	
90 Zr	# 3	72	58625.4	0.0000	3.7890	ppb	0.89	50.00	
95 Mo	# 3	115	4953.3	0.0000	1.0410	ppb	3.05	500.00	
107 Ag	# 3	115	12196.8	0.0000	0.9698	ppb	1.41	50.00	
111 Cd	# 3	115	2997.4	0.0000	1.0880	ppb	2.61	500.00	
118 Sn	# 3	115	8500.6	0.0000	1.0280	ppb	0.17	500.00	
121 Sb	# 3	115	11198.2	0.0000	1.0620	ppb	1.80	500.00	
137 Ba	# 3	115	4484.2	0.0000	0.9971	ppb	2.36	1000.00	
182 W	# 3	159	21559.0	0.0000	1.7620	ppb	1.88	50.00	
205 Tl	# 3	159	29045.9	0.0000	1.1750	ppb	0.47	500.00	
208 Pb	# 3	159	40105.3	0.0000	1.1640	ppb	0.51	500.00	
235 U	# 3	159	366.7	0.0000	0.0084	ppb	14.15	30.00	
238 U	# 3	159	47804.3	0.0000	1.0770	ppb	1.41	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1525091.40	0.75	1796883.80	84.9	60 - 125	
45 Sc # 1	743719.75	0.44	814426.31	91.3	60 - 125	
45 Sc # 2	149762.45	0.79	168587.55	88.8	60 - 125	
45 Sc # 3	1911705.10	0.84	2150312.80	88.9	60 - 125	
72 Ge # 1	184833.31	0.34	207507.67	89.1	60 - 125	
72 Ge # 2	77944.66	0.77	87108.25	89.5	60 - 125	
72 Ge # 3	402926.41	0.27	458551.66	87.9	60 - 125	
115 In # 3	3078125.30	0.59	3329821.00	92.4	60 - 125	
159 Tb # 3	4847797.50	0.78	5173018.50	93.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03012.D\F6B03012.D#
Date Acquired:	Feb 3 2016 02:02 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLB0302
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	96253.0	0.0000	0.5242	ppb	3.78	50.00	
9 Be	# 3	6	2145.8	0.0000	0.5020	ppb	5.01	50.00	
11 B	# 3	6	4001.8	0.0000	0.4854	ppb	13.75	50.00	
23 Na	# 1	45	179662.6	0.0000	36.2000	ppb	1.23	50000.00	
24 Mg	# 3	45	541807.5	0.0000	53.7900	ppb	0.56	50000.00	
27 Al	# 3	45	720826.7	0.0000	56.1900	ppb	0.47	50000.00	
28 Si	# 1	45	973.4	0.0000	0.1797	ppb	70.95	5000.00	
31 P	# 3	45	16449.8	0.0000	-0.7737	ppb	34.30	500.00	
39 K	# 2	45	50660.7	0.0000	50.8600	ppb	4.54	50000.00	
40 Ca	# 1	45	257686.4	0.0000	51.3300	ppb	0.17	50000.00	
47 Ti	# 3	45	797.8	0.0000	0.5258	ppb	2.36	500.00	
51 V	# 2	45	2851.2	0.0000	0.5082	ppb	3.47	500.00	
52 Cr	# 2	45	1927.5	0.0000	0.4993	ppb	1.21	500.00	
55 Mn	# 3	45	15532.1	0.0000	0.5504	ppb	1.97	3000.00	
56 Fe	# 1	45	382272.4	0.0000	57.4200	ppb	0.76	50000.00	
59 Co	# 3	45	8888.6	0.0000	0.5592	ppb	0.80	500.00	
60 Ni	# 2	45	781.6	0.0000	0.5709	ppb	2.33	500.00	
63 Cu	# 2	45	1632.1	0.0000	0.5089	ppb	2.54	500.00	
66 Zn	# 3	72	10771.0	0.0000	4.3780	ppb	2.57	500.00	
75 As	# 2	72	298.0	0.0000	0.5291	ppb	9.77	500.00	
78 Se	# 1	72	127.3	0.0000	0.5027	ppb	3.30	500.00	
88 Sr	# 3	72	14116.3	0.0000	0.5447	ppb	0.67	500.00	
90 Zr	# 3	72	642.3	0.0000	0.0168	ppb	14.14	50.00	
95 Mo	# 3	115	2520.3	0.0000	0.5227	ppb	5.04	500.00	
107 Ag	# 3	115	1035.6	0.0000	0.0784	ppb	10.07	50.00	
111 Cd	# 3	115	1486.5	0.0000	0.5364	ppb	0.51	500.00	
118 Sn	# 3	115	4480.9	0.0000	0.5320	ppb	2.06	500.00	
121 Sb	# 3	115	5814.8	0.0000	0.5251	ppb	1.73	500.00	
137 Ba	# 3	115	2408.1	0.0000	0.5117	ppb	3.04	1000.00	
182 W	# 3	159	301.1	0.0000	-0.0018	ppb	150.73	50.00	
205 Tl	# 3	159	14897.8	0.0000	0.5962	ppb	1.30	500.00	
208 Pb	# 3	159	20871.6	0.0000	0.5931	ppb	0.18	500.00	
235 U	# 3	159	204.5	0.0000	0.0046	ppb	8.28	30.00	
238 U	# 3	159	24388.0	0.0000	0.5445	ppb	1.04	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1544525.50	1.18	1796883.80	86.0	60 - 125	
45 Sc # 1	756197.25	0.62	814426.31	92.9	60 - 125	
45 Sc # 2	152198.38	0.68	168587.55	90.3	60 - 125	
45 Sc # 3	1917836.40	0.83	2150312.80	89.2	60 - 125	
72 Ge # 1	187185.28	0.51	207507.67	90.2	60 - 125	
72 Ge # 2	79425.54	0.05	87108.25	91.2	60 - 125	
72 Ge # 3	407098.41	0.27	458551.66	88.8	60 - 125	
115 In # 3	3095652.50	0.68	3329821.00	93.0	60 - 125	
159 Tb # 3	4887455.50	0.19	5173018.50	94.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03013.D\F6B03013.D#
Date Acquired:	Feb 3 2016 02:07 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.44	ppb	87791.1	18.57	---	
9 Be	0.01	ppb	86.7	20.83	---	
11 B	0.38	ppb	3396.1	11.18	---	
23 Na	95460.00	ppb	203077900.0	0.43	120000.00	
24 Mg	95070.00	ppb	895838210.0	0.36	120000.00	
27 Al	94700.00	ppb	1172148000.0	0.69	120000.00	
28 Si	5.23	ppb	4459.7	3.47	---	
31 P	99680.00	ppb	63678340.0	0.16	---	
39 K	98290.00	ppb	39179248.0	0.49	120000.00	
40 Ca	97640.00	ppb	424935010.0	0.29	120000.00	
47 Ti	2132.00	ppb	2544888.0	0.90	2400.00	
51 V	0.14	ppb	1776.1	14.67	---	
52 Cr	1.26	ppb	4368.0	0.85	---	
55 Mn	0.29	ppb	10120.5	3.70	---	
56 Fe	93680.00	ppb	595513980.0	0.58	120000.00	
59 Co	0.32	ppb	5268.9	2.93	---	
60 Ni	0.20	ppb	371.8	10.68	---	
63 Cu	0.58	ppb	1800.8	2.99	---	
66 Zn	2.57	ppb	6717.3	1.15	---	
75 As	0.21	ppb	142.4	3.81	---	
78 Se	0.05	ppb	13.8	27.66	---	
88 Sr	0.65	ppb	16679.2	1.72	---	
90 Zr	0.91	ppb	14646.8	2.58	---	
95 Mo	1973.00	ppb	8214152.0	0.24	2400.00	
107 Ag	0.02	ppb	280.0	16.06	---	
111 Cd	0.26	ppb	639.7	15.75	---	
118 Sn	0.09	ppb	778.9	7.42	---	
121 Sb	0.04	ppb	824.5	18.75	---	
137 Ba	0.08	ppb	483.4	6.27	---	
182 W	0.13	ppb	1798.0	4.05	---	
205 Tl	0.01	ppb	304.5	5.57	---	
208 Pb	0.22	ppb	7562.2	0.75	---	
235 U	0.00	ppb	18.9	53.03	---	
238 U	0.01	ppb	257.8	14.73	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1427703.5	0.57	1796883.80	79.5	60 - 125	
45 Sc	742351.7	0.17	814426.31	91.2	60 - 125	
45 Sc	149135.6	0.89	168587.55	88.5	60 - 125	
45 Sc	1862321.0	0.75	2150312.80	86.6	60 - 125	
72 Ge	173275.8	0.60	207507.67	83.5	60 - 125	
72 Ge	74572.4	0.21	87108.25	85.6	60 - 125	
72 Ge	408748.8	0.19	458551.66	89.1	60 - 125	
115 In	2715262.3	0.18	3329821.00	81.5	60 - 125	
159 Tb	4482997.5	0.35	5173018.50	86.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03014.D\F6B03014.D#
Date Acquired:	Feb 3 2016 02:11 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	19.75	ppb	328615.1	0.72	20.00	80 - 120	
9 Be	19.64	ppb	71776.8	1.00	20.00	80 - 120	
11 B	18.42	ppb	54016.2	1.43	20.00	80 - 120	
23 Na	95620.00	ppb	203503700.0	0.29	100000.00	80 - 120	
24 Mg	94800.00	ppb	870298820.0	0.02	100000.00	80 - 120	
27 Al	94040.00	ppb	1133938000.0	0.50	100000.00	80 - 120	
28 Si	200.60	ppb	140031.1	0.54	200.00	80 - 120	
31 P	99190.00	ppb	61733992.0	0.33	100000.00	80 - 120	
39 K	98520.00	ppb	38719120.0	0.57	100000.00	80 - 120	
40 Ca	98170.00	ppb	427440380.0	0.18	100000.00	80 - 120	
47 Ti	2163.00	ppb	2515233.0	0.41	2000.00	80 - 120	
51 V	19.95	ppb	55260.2	0.10	20.00	80 - 120	
52 Cr	20.14	ppb	65151.8	0.13	20.00	80 - 120	
55 Mn	20.73	ppb	391096.4	0.41	20.00	80 - 120	
56 Fe	94200.00	ppb	599086720.0	0.28	100000.00	80 - 120	
59 Co	21.26	ppb	290340.8	0.42	20.00	80 - 120	
60 Ni	19.60	ppb	20502.4	0.60	20.00	80 - 120	
63 Cu	19.28	ppb	50812.2	0.26	20.00	80 - 120	
66 Zn	21.33	ppb	46706.1	2.08	20.00	80 - 120	
75 As	20.57	ppb	8925.5	1.10	20.00	80 - 120	
78 Se	22.05	ppb	5086.7	0.93	20.00	80 - 120	
88 Sr	21.03	ppb	495031.3	1.13	20.00	80 - 120	
90 Zr	10.41	ppb	154717.0	0.22	20.00	80 - 120	Fail
95 Mo	1982.00	ppb	8191808.0	0.01	2000.00	80 - 120	
107 Ag	17.91	ppb	196456.5	0.61	20.00	80 - 120	
111 Cd	19.99	ppb	48186.7	1.50	20.00	80 - 120	
118 Sn	19.40	ppb	138603.9	0.34	20.00	80 - 120	
121 Sb	20.43	ppb	180832.4	0.17	20.00	80 - 120	
137 Ba	20.46	ppb	77309.0	0.72	20.00	80 - 120	
182 W	20.43	ppb	227037.7	0.43	20.00	80 - 120	
205 Tl	21.50	ppb	487981.9	0.39	20.00	80 - 120	
208 Pb	21.35	ppb	668483.4	0.51	20.00	80 - 120	
235 U	0.15	ppb	6065.0	3.73	0.14	80 - 120	
238 U	21.07	ppb	859974.9	0.75	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1347969.9	1.07	1796883.80	75.0	60 - 125	
45 Sc	742643.2	0.10	814426.31	91.2	60 - 125	
45 Sc	147034.5	0.08	168587.55	87.2	60 - 125	
45 Sc	1814308.9	0.58	2150312.80	84.4	60 - 125	
72 Ge	174285.5	0.21	207507.67	84.0	60 - 125	
72 Ge	74376.0	1.23	87108.25	85.4	60 - 125	
72 Ge	388575.8	1.39	458551.66	84.7	60 - 125	
115 In	2694633.5	0.11	3329821.00	80.9	60 - 125	
159 Tb	4463539.0	0.23	5173018.50	86.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03016.D\F6B03016.D#
Date Acquired: Feb 3 2016 02:20 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:48 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.86 ppb	0.66	25.00	90 - 110	
9 Be	25.38 ppb	1.37	25.00	90 - 110	
11 B	25.22 ppb	0.81	25.00	90 - 110	
23 Na	23680.00 ppb	0.50	25000.00	90 - 110	
24 Mg	23700.00 ppb	0.22	25000.00	90 - 110	
27 Al	24070.00 ppb	0.48	25000.00	90 - 110	
28 Si	2380.00 ppb	0.25	2500.00	90 - 110	
31 P	251.90 ppb	0.66	250.00	90 - 110	
39 K	25450.00 ppb	0.97	25000.00	90 - 110	
40 Ca	24550.00 ppb	0.27	25000.00	90 - 110	
47 Ti	251.80 ppb	0.63	250.00	90 - 110	
51 V	249.00 ppb	0.88	250.00	90 - 110	
52 Cr	246.30 ppb	0.63	250.00	90 - 110	
55 Mn	1473.00 ppb	0.95	1500.00	90 - 110	
56 Fe	24380.00 ppb	0.44	25000.00	90 - 110	
59 Co	251.60 ppb	1.01	250.00	90 - 110	
60 Ni	249.60 ppb	1.02	250.00	90 - 110	
63 Cu	250.50 ppb	0.78	250.00	90 - 110	
66 Zn	246.90 ppb	1.49	250.00	90 - 110	
75 As	252.30 ppb	0.43	250.00	90 - 110	
78 Se	254.30 ppb	0.97	250.00	90 - 110	
88 Sr	258.90 ppb	0.49	250.00	90 - 110	
90 Zr	26.22 ppb	0.53	25.00	90 - 110	
95 Mo	243.40 ppb	1.64	250.00	90 - 110	
107 Ag	24.84 ppb	0.76	25.00	90 - 110	
111 Cd	252.10 ppb	0.45	250.00	90 - 110	
118 Sn	247.10 ppb	1.01	250.00	90 - 110	
121 Sb	252.70 ppb	0.49	250.00	90 - 110	
137 Ba	506.30 ppb	0.55	500.00	90 - 110	
182 W	25.43 ppb	0.32	25.00	90 - 110	
205 Tl	256.10 ppb	0.26	250.00	90 - 110	
208 Pb	254.00 ppb	0.38	250.00	90 - 110	
235 U	1.58 ppb	0.63	1.80	90 - 110	Fail
238 U	251.10 ppb	0.50	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1213730.60	1.00	1796883.80	67.5	60 - 125	
45 Sc	670982.00	0.30	814426.31	82.4	60 - 125	
45 Sc	130569.20	0.62	168587.55	77.4	60 - 125	
45 Sc	1672860.10	0.81	2150312.80	77.8	60 - 125	
72 Ge	163568.20	0.66	207507.67	78.8	60 - 125	
72 Ge	66267.99	0.84	87108.25	76.1	60 - 125	
72 Ge	352690.81	0.40	458551.66	76.9	60 - 125	
115 In	2622778.50	0.44	3329821.00	78.8	60 - 125	
159 Tb	4388555.50	0.26	5173018.50	84.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03017.D\F6B03017.D#
Date Acquired:	Feb 3 2016 02:24 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1102
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0533	ppb	68823.6	118.90	0.20	
9 Be	0.0037	ppb	46.7	57.54	0.10	
11 B	-0.0571	ppb	1733.5	32.72	5.00	
23 Na	-17.2600	ppb	52847.1	0.57	40.00	
24 Mg	1.3280	ppb	26656.9	17.88	10.00	
27 Al	1.8040	ppb	22461.1	15.99	20.00	
28 Si	0.6442	ppb	1076.7	11.96	20.00	
31 P	-0.7913	ppb	13387.6	73.58	10.00	
39 K	2.6570	ppb	25557.8	28.32	20.00	
40 Ca	5.9440	ppb	46721.2	4.28	25.00	
47 Ti	0.0053	ppb	128.9	587.22	0.50	
51 V	0.0343	ppb	1255.4	40.93	0.50	
52 Cr	0.0208	ppb	272.4	12.29	0.20	
55 Mn	0.0565	ppb	4719.8	21.39	0.20	
56 Fe	8.9150	ppb	56434.2	4.41	10.00	
59 Co	-0.0116	ppb	547.8	65.58	0.20	
60 Ni	0.0276	ppb	162.7	42.90	0.20	
63 Cu	-0.0168	ppb	168.7	20.84	0.40	
66 Zn	0.0306	ppb	828.9	161.70	2.00	
75 As	0.0508	ppb	64.9	26.62	0.20	
78 Se	0.0665	ppb	16.4	35.24	0.20	
88 Sr	0.0090	ppb	777.8	59.28	0.20	
90 Zr	-0.0085	ppb	211.1	23.82	2.00	
95 Mo	0.3188	ppb	1351.2	19.48	0.40	
107 Ag	0.0011	ppb	53.3	46.51	0.20	
111 Cd	0.0191	ppb	46.8	20.77	0.20	
118 Sn	0.0951	ppb	781.2	13.48	0.20	
121 Sb	0.0642	ppb	991.2	16.91	0.40	
137 Ba	0.0131	ppb	215.6	32.69	0.20	
182 W	0.0179	ppb	477.8	26.77	1.00	
205 Tl	0.0477	ppb	1121.2	11.60	0.20	
208 Pb	0.0190	ppb	1061.2	19.40	0.10	
235 U	0.0004	ppb	20.0	62.10	1.00	
238 U	0.0407	ppb	1656.8	10.57	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1189143.0	0.30	1796883.80	66.2	60 - 125	
45 Sc	625704.6	0.37	814426.31	76.8	60 - 125	
45 Sc	125200.6	0.39	168587.55	74.3	60 - 125	
45 Sc	1562039.9	0.60	2150312.80	72.6	60 - 125	
72 Ge	159276.4	0.40	207507.67	76.8	60 - 125	
72 Ge	66376.1	0.36	87108.25	76.2	60 - 125	
72 Ge	343646.3	0.85	458551.66	74.9	60 - 125	
115 In	2695407.0	0.16	3329821.00	80.9	60 - 125	
159 Tb	4329614.0	0.88	5173018.50	83.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03052.D\F6B03052.D#
Date Acquired: Feb 3 2016 05:40 pm
Operator: CCapul
Sample Name: CCV5
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:48 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.10 ppb	0.26	25.00	90 - 110	
9 Be	26.29 ppb	0.92	25.00	90 - 110	
11 B	26.78 ppb	1.13	25.00	90 - 110	
23 Na	22810.00 ppb	0.33	25000.00	90 - 110	
24 Mg	22630.00 ppb	1.84	25000.00	90 - 110	
27 Al	23200.00 ppb	1.20	25000.00	90 - 110	
28 Si	2412.00 ppb	0.55	2500.00	90 - 110	
31 P	252.90 ppb	2.06	250.00	90 - 110	
39 K	25750.00 ppb	1.48	25000.00	90 - 110	
40 Ca	24580.00 ppb	0.18	25000.00	90 - 110	
47 Ti	256.70 ppb	1.40	250.00	90 - 110	
51 V	250.60 ppb	1.55	250.00	90 - 110	
52 Cr	245.70 ppb	1.29	250.00	90 - 110	
55 Mn	1495.00 ppb	2.05	1500.00	90 - 110	
56 Fe	24510.00 ppb	0.33	25000.00	90 - 110	
59 Co	259.90 ppb	0.95	250.00	90 - 110	
60 Ni	252.20 ppb	1.17	250.00	90 - 110	
63 Cu	252.30 ppb	1.13	250.00	90 - 110	
66 Zn	243.90 ppb	0.54	250.00	90 - 110	
75 As	253.30 ppb	0.37	250.00	90 - 110	
78 Se	251.40 ppb	0.57	250.00	90 - 110	
88 Sr	263.50 ppb	0.12	250.00	90 - 110	
90 Zr	26.01 ppb	0.55	25.00	90 - 110	
95 Mo	242.70 ppb	0.54	250.00	90 - 110	
107 Ag	24.60 ppb	0.33	25.00	90 - 110	
111 Cd	249.10 ppb	0.58	250.00	90 - 110	
118 Sn	246.70 ppb	0.33	250.00	90 - 110	
121 Sb	252.70 ppb	1.04	250.00	90 - 110	
137 Ba	513.00 ppb	1.06	500.00	90 - 110	
182 W	25.09 ppb	0.35	25.00	90 - 110	
205 Tl	252.00 ppb	0.37	250.00	90 - 110	
208 Pb	251.30 ppb	0.34	250.00	90 - 110	
235 U	1.56 ppb	1.23	1.80	90 - 110	Fail
238 U	248.10 ppb	0.34	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	819901.19	0.38	1796883.80	45.6	60 - 125	~~ISFail~~
45 Sc	475138.06	0.37	814426.31	58.3	60 - 125	ISFail
45 Sc	95071.47	1.15	168587.55	56.4	60 - 125	ISFail
45 Sc	1203554.10	1.37	2150312.80	56.0	60 - 125	ISFail
72 Ge	120314.32	0.95	207507.67	58.0	60 - 125	ISFail
72 Ge	50166.73	0.33	87108.25	57.6	60 - 125	ISFail
72 Ge	263692.13	0.85	458551.66	57.5	60 - 125	ISFail
115 In	2020596.40	0.75	3329821.00	60.7	60 - 125	
159 Tb	3384351.50	0.46	5173018.50	65.4	60 - 125	

CW 2/3/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
7 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03053.D\F6B03053.D#
Date Acquired: Feb 3 2016 05:44 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB5
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1559	ppb	48281.1	14.61	0.20	
9 Be	0.0017	ppb	27.8	55.70	0.10	
11 B	1.0070	ppb	3021.5	8.09	5.00	
23 Na	-9.4070	ppb	49081.8	4.85	40.00	
24 Mg	1.8430	ppb	22602.3	15.93	10.00	
27 Al	1.9080	ppb	17303.9	14.68	20.00	
28 Si	1.1950	ppb	1025.6	7.05	20.00	
31 P	-0.9133	ppb	9801.4	102.44	10.00	
39 K	10.2400	ppb	20968.1	37.16	20.00	
40 Ca	6.4120	ppb	35519.1	6.78	25.00	
47 Ti	-0.0465	ppb	56.7	43.20	0.50	
51 V	0.0479	ppb	960.5	24.73	0.50	
52 Cr	0.0236	ppb	209.1	6.04	0.20	
55 Mn	0.0956	ppb	3934.0	24.32	0.20	
56 Fe	9.0990	ppb	42097.1	7.39	10.00	
59 Co	-0.0048	ppb	461.1	106.72	0.20	
60 Ni	0.0134	ppb	112.0	191.24	0.20	
63 Cu	-0.0182	ppb	123.6	37.11	0.40	
66 Zn	0.0669	ppb	682.3	33.48	2.00	
75 As	0.0732	ppb	56.2	55.61	0.20	
78 Se	0.0793	ppb	14.4	2.48	0.20	
88 Sr	0.0183	ppb	738.9	13.56	0.20	
90 Zr	-0.0068	ppb	176.7	35.26	2.00	
95 Mo	0.1935	ppb	651.2	8.63	0.40	
107 Ag	0.0007	ppb	37.8	344.80	0.20	
111 Cd	0.0237	ppb	45.3	18.26	0.20	
118 Sn	0.0992	ppb	633.4	21.78	0.20	
121 Sb	0.0616	ppb	756.7	14.21	0.40	
137 Ba	0.0185	ppb	184.5	35.82	0.20	
182 W	0.0120	ppb	320.0	19.14	1.00	
205 Tl	0.0511	ppb	922.3	11.45	0.20	
208 Pb	0.0204	ppb	852.3	13.26	0.10	
235 U	0.0004	ppb	16.7	26.22	1.00	
238 U	0.0426	ppb	1333.5	12.66	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	820489.4	0.59	1796883.80	45.7	60 - 125	~~ISFail~~
45 Sc	458887.2	0.91	814426.31	56.3	60 - 125	ISFail
45 Sc	93456.8	0.44	168587.55	55.4	60 - 125	ISFail
45 Sc	1149437.5	1.13	2150312.80	53.5	60 - 125	ISFail
72 Ge	120301.7	0.83	207507.67	58.0	60 - 125	ISFail
72 Ge	50684.0	1.22	87108.25	58.2	60 - 125	ISFail
72 Ge	261070.9	0.37	458551.66	56.9	60 - 125	ISFail
115 In	2106550.3	0.34	3329821.00	63.3	60 - 125	
159 Tb	3338261.5	0.52	5173018.50	64.5	60 - 125	

cw 2/3/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
7 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03063.D\F6B03063.D#
Date Acquired: Feb 3 2016 06:27 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: IMB005SB
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: MBS
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0965	ppb	54731.9	61.90	0.50	
9 Be	0.0036	ppb	36.7	94.32	0.50	
11 B	0.4180	ppb	2301.4	7.11	10.00	
23 Na	-6.5440	ppb	60001.7	12.29	100.00	
24 Mg	2.1110	ppb	27861.2	1.29	100.00	
27 Al	2.1750	ppb	22314.0	1.89	100.00	
28 Si	1.0380	ppb	1089.0	16.60	50.00	
31 P	6.2480	ppb	14549.1	17.45	10.00	
39 K	14.1900	ppb	24989.0	9.46	100.00	
40 Ca	51.1300	ppb	176926.5	0.60	100.00	
47 Ti	-0.0368	ppb	73.3	35.68	0.50	
51 V	0.1728	ppb	1337.2	10.24	0.50	
52 Cr	0.0321	ppb	257.8	26.93	0.50	
55 Mn	-0.0124	ppb	3063.8	85.01	0.50	
56 Fe	1.2670	ppb	12871.6	4.03	100.00	
59 Co	-0.0283	ppb	298.9	1.34	0.50	
60 Ni	-0.0265	ppb	97.6	24.16	0.50	
63 Cu	-0.0248	ppb	128.0	3.56	0.50	
66 Zn	0.3073	ppb	1146.8	9.71	2.00	
75 As	0.0568	ppb	56.7	80.79	0.50	
78 Se	0.0025	ppb	2.4	85.03	0.50	
88 Sr	0.1328	ppb	2838.2	2.65	0.50	
90 Zr	-0.0131	ppb	126.7	5.14	5.00	
95 Mo	0.0143	ppb	78.9	33.34	0.50	
107 Ag	0.0004	ppb	38.9	355.54	0.50	
111 Cd	0.0052	ppb	11.1	154.20	0.50	
118 Sn	2.9670	ppb	18136.7	1.86	20.00	
121 Sb	-0.0068	ppb	310.0	33.81	0.50	
137 Ba	0.0198	ppb	205.6	31.90	0.50	
182 W	-0.0004	ppb	236.7	946.73	2.00	
205 Tl	0.0010	ppb	77.8	115.77	0.50	
208 Pb	-0.0019	ppb	362.2	17.43	0.50	
235 U	0.0002	ppb	12.2	52.70	---	
238 U	0.0012	ppb	77.8	19.10	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	939095.5	0.97	1796883.80	52.3	60 - 125	~~ISFail~~
45 Sc	521060.9	0.76	814426.31	64.0	60 - 125	
45 Sc	106369.1	1.00	168587.55	63.1	60 - 125	
45 Sc	1324711.4	1.55	2150312.80	61.6	60 - 125	
72 Ge	132358.7	0.79	207507.67	63.8	60 - 125	
72 Ge	55777.0	1.96	87108.25	64.0	60 - 125	
72 Ge	290876.0	0.85	458551.66	63.4	60 - 125	
115 In	2296564.3	1.24	3329821.00	69.0	60 - 125	
159 Tb	3646665.8	1.13	5173018.50	70.5	60 - 125	

2/9/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03064.D\F6B03064.D#
Date Acquired: Feb 3 2016 06:31 pm
Operator: CCapul
Sample Name: CCV6
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:48 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.06 ppb	0.73	25.00	90 - 110	
9 Be	26.54 ppb	0.52	25.00	90 - 110	
11 B	25.98 ppb	0.40	25.00	90 - 110	
23 Na	23130.00 ppb	0.78	25000.00	90 - 110	
24 Mg	22770.00 ppb	0.19	25000.00	90 - 110	
27 Al	23310.00 ppb	0.21	25000.00	90 - 110	
28 Si	2420.00 ppb	0.23	2500.00	90 - 110	
31 P	251.30 ppb	0.52	250.00	90 - 110	
39 K	26080.00 ppb	0.86	25000.00	90 - 110	
40 Ca	24730.00 ppb	0.46	25000.00	90 - 110	
47 Ti	254.90 ppb	0.51	250.00	90 - 110	
51 V	251.40 ppb	0.10	250.00	90 - 110	
52 Cr	246.00 ppb	0.11	250.00	90 - 110	
55 Mn	1482.00 ppb	0.25	1500.00	90 - 110	
56 Fe	24370.00 ppb	0.75	25000.00	90 - 110	
59 Co	256.30 ppb	0.12	250.00	90 - 110	
60 Ni	251.70 ppb	0.21	250.00	90 - 110	
63 Cu	251.00 ppb	0.29	250.00	90 - 110	
66 Zn	244.40 ppb	0.97	250.00	90 - 110	
75 As	252.00 ppb	1.55	250.00	90 - 110	
78 Se	251.90 ppb	0.52	250.00	90 - 110	
88 Sr	262.10 ppb	0.19	250.00	90 - 110	
90 Zr	25.41 ppb	0.08	25.00	90 - 110	
95 Mo	244.20 ppb	0.42	250.00	90 - 110	
107 Ag	24.65 ppb	0.53	25.00	90 - 110	
111 Cd	248.20 ppb	0.56	250.00	90 - 110	
118 Sn	246.10 ppb	0.66	250.00	90 - 110	
121 Sb	253.50 ppb	0.30	250.00	90 - 110	
137 Ba	509.50 ppb	0.76	500.00	90 - 110	
182 W	24.95 ppb	0.45	25.00	90 - 110	
205 Tl	250.60 ppb	0.68	250.00	90 - 110	
208 Pb	250.10 ppb	0.79	250.00	90 - 110	
235 U	1.55 ppb	0.89	1.80	90 - 110	Fail
238 U	246.20 ppb	0.62	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	888283.81	0.89	1796883.80	49.4	60 - 125	~~ISFail~~
45 Sc	514839.56	0.20	814426.31	63.2	60 - 125	
45 Sc	103044.58	0.25	168587.55	61.1	60 - 125	
45 Sc	1307175.80	0.40	2150312.80	60.8	60 - 125	
72 Ge	128128.70	0.83	207507.67	61.7	60 - 125	
72 Ge	53806.43	1.28	87108.25	61.8	60 - 125	
72 Ge	280632.84	0.50	458551.66	61.2	60 - 125	
115 In	2122864.80	0.34	3329821.00	63.8	60 - 125	
159 Tb	3488211.50	0.42	5173018.50	67.4	60 - 125	

cw 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03065.D\F6B03065.D#
Date Acquired: Feb 3 2016 06:35 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB6
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1080	ppb	51348.9	21.34	0.20	
9 Be	0.0060	ppb	40.0	117.84	0.10	
11 B	0.4627	ppb	2236.9	7.23	5.00	
23 Na	-14.3900	ppb	45567.2	2.02	40.00	
24 Mg	1.6220	ppb	22716.9	14.14	10.00	
27 Al	1.8280	ppb	17798.9	11.24	20.00	
28 Si	0.8004	ppb	917.8	14.72	20.00	
31 P	-0.6652	ppb	10547.6	186.11	10.00	
39 K	11.8300	ppb	22858.8	3.20	20.00	
40 Ca	6.1020	ppb	37171.9	1.13	25.00	
47 Ti	-0.0512	ppb	56.7	20.97	0.50	
51 V	0.0491	ppb	1029.6	68.11	0.50	
52 Cr	0.0170	ppb	209.1	43.29	0.20	
55 Mn	0.0703	ppb	3874.0	23.84	0.20	
56 Fe	8.4820	ppb	42523.9	5.60	10.00	
59 Co	-0.0068	ppb	473.4	86.18	0.20	
60 Ni	-0.0009	ppb	109.8	1270.20	0.20	
63 Cu	-0.0244	ppb	120.9	57.66	0.40	
66 Zn	0.0562	ppb	700.0	64.01	2.00	
75 As	0.0623	ppb	55.6	21.51	0.20	
78 Se	0.1117	ppb	20.7	6.73	0.20	
88 Sr	0.0150	ppb	720.0	7.08	0.20	
90 Zr	-0.0097	ppb	155.6	30.03	2.00	
95 Mo	0.1583	ppb	556.7	19.29	0.40	
107 Ag	0.0019	ppb	50.0	22.44	0.20	
111 Cd	0.0153	ppb	30.5	38.49	0.20	
118 Sn	0.0956	ppb	635.6	20.85	0.20	
121 Sb	0.0597	ppb	770.0	30.35	0.40	
137 Ba	0.0167	ppb	185.6	34.74	0.20	
182 W	0.0095	ppb	304.5	4.99	1.00	
205 Tl	0.0555	ppb	1014.5	16.46	0.20	
208 Pb	0.0192	ppb	840.0	28.67	0.10	
235 U	0.0003	ppb	13.3	64.17	1.00	
238 U	0.0389	ppb	1245.7	9.73	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	879381.8	1.45	1796883.80	48.9	60 - 125	~~ISFail~~
45 Sc	491686.6	0.07	814426.31	60.4	60 - 125	
45 Sc	99978.9	0.78	168587.55	59.3	60 - 125	ISFail
45 Sc	1224919.6	1.21	2150312.80	57.0	60 - 125	ISFail
72 Ge	126839.0	0.35	207507.67	61.1	60 - 125	
72 Ge	53179.4	1.01	87108.25	61.0	60 - 125	
72 Ge	273967.7	0.76	458551.66	59.7	60 - 125	ISFail
115 In	2183398.0	0.87	3329821.00	65.6	60 - 125	
159 Tb	3398393.3	0.12	5173018.50	65.7	60 - 125	

CV 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
4 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

LCS QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03066.D\F6B03066.D#
Date Acquired:	Feb 3 2016 06:40 pm
Operator:	CCapul
Sample Name:	IMB005SL
Misc Info:	
Vial Number:	2305
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	LCSS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	374594.09	38.02	ppb	1.02	40.00	80 - 120	
9 Be	99705.75	40.87	ppb	0.78	40.00	80 - 120	
11 B	74332.43	38.76	ppb	0.20	40.00	80 - 120	
23 Na	5734821.00	3797.00	ppb	0.84	4000.00	80 - 120	
24 Mg	24708100.00	3703.00	ppb	0.45	4000.00	80 - 120	
27 Al	32678820.00	3730.00	ppb	0.70	4000.00	80 - 120	
28 Si	1432.34	1.75	ppb	3.31	4000.00	80 - 120	Fail
31 P	14762.42	6.88	ppb	7.79	400.00	80 - 120	Fail
39 K	1219061.00	4259.00	ppb	0.25	4000.00	80 - 120	
40 Ca	12540730.00	4100.00	ppb	0.44	4000.00	80 - 120	
47 Ti	34206.16	40.37	ppb	1.71	40.00	80 - 120	
51 V	77500.04	39.54	ppb	0.53	40.00	80 - 120	
52 Cr	88767.05	38.37	ppb	0.66	40.00	80 - 120	
55 Mn	570975.88	41.91	ppb	0.32	40.00	80 - 120	
56 Fe	18170480.00	4072.00	ppb	0.71	4000.00	80 - 120	
59 Co	434764.59	43.90	ppb	0.27	40.00	80 - 120	
60 Ni	30923.03	41.43	ppb	0.57	40.00	80 - 120	
63 Cu	78132.46	41.49	ppb	0.56	40.00	80 - 120	
66 Zn	123037.40	78.38	ppb	0.51	80.00	80 - 120	
75 As	12624.44	39.59	ppb	0.66	40.00	80 - 120	
78 Se	6689.59	38.83	ppb	1.75	40.00	80 - 120	
88 Sr	749979.88	43.88	ppb	0.23	40.00	80 - 120	
90 Zr	3371.63	0.29	ppb	5.23	30.00	80 - 120	Fail
95 Mo	125676.40	36.85	ppb	0.18	40.00	80 - 120	
107 Ag	342399.19	37.84	ppb	0.34	40.00	80 - 120	
111 Cd	77081.87	38.75	ppb	0.97	40.00	80 - 120	
118 Sn	243327.20	41.29	ppb	0.48	40.00	80 - 120	
121 Sb	279443.19	38.30	ppb	0.20	40.00	80 - 120	
137 Ba	124072.00	39.84	ppb	0.92	40.00	80 - 120	
182 W	383.35	0.02	ppb	28.63	40.00	80 - 120	Fail
205 Tl	781059.31	43.03	ppb	0.41	40.00	80 - 120	
208 Pb	1080408.00	43.16	ppb	0.92	40.00	80 - 120	
235 U	9567.20	0.30	ppb	2.19	0.28	80 - 120	
238 U	1295173.00	39.68	ppb	0.92	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	899956.63	0.63	1796883.80	50.1	60 - 125	~~ISFail~~
45 Sc	520944.56	0.60	814426.31	64.0	60 - 125	
45 Sc	105338.45	0.65	168587.55	62.5	60 - 125	
45 Sc	1317920.80	0.10	2150312.80	61.3	60 - 125	
72 Ge	130190.77	0.69	207507.67	62.7	60 - 125	
72 Ge	54809.14	0.90	87108.25	62.9	60 - 125	
72 Ge	282352.31	0.65	458551.66	61.6	60 - 125	
115 In	2223305.50	0.32	3329821.00	66.8	60 - 125	
159 Tb	3569498.30	0.46	5173018.50	69.0	60 - 125	

cw 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

4 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03067.D\F6B03067.D#
Date Acquired:	Feb 3 2016 06:44 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B012-01
Misc Info:	
Vial Number:	2306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	174983.1	0.0000	15.1200	ppb	1.88	50.00	
9 Be	# 3	6	2493.6	0.0000	1.0410	ppb	3.53	50.00	
11 B	# 3	6	14204.9	0.0000	7.0170	ppb	2.78	50.00	
23 Na	# 1	45	107348.8	0.0000	25.0900	ppb	0.89	50000.00	
24 Mg	# 3	45	16919910.0	0.0000	2567.0000	ppb	0.25	50000.00	
27 Al	# 3	45	164033500.0	0.0000	18960.0000	ppb	0.49	50000.00	
28 Si	# 1	45	965110.5	0.0000	1978.0000	ppb	2.03	5000.00	
31 P	# 3	45	130153.8	0.0000	265.8000	ppb	0.64	500.00	
39 K	# 2	45	1120245.0	0.0000	3977.0000	ppb	0.28	50000.00	
40 Ca	# 1	45	10910080.0	0.0000	3561.0000	ppb	0.58	50000.00	
47 Ti	# 3	45	342880.1	0.0000	410.9000	ppb	0.39	500.00	
51 V	# 2	45	79711.2	0.0000	41.4000	ppb	0.24	500.00	
52 Cr	# 2	45	48092.9	0.0000	21.1100	ppb	0.64	500.00	
55 Mn	# 3	45	4537221.0	0.0000	338.9000	ppb	1.07	3000.00	
56 Fe	# 1	45	88533448.0	0.0000	19820.0000	ppb	0.36	50000.00	
59 Co	# 3	45	73652.9	0.0000	7.4830	ppb	1.75	500.00	
60 Ni	# 2	45	11523.0	0.0000	15.6100	ppb	1.57	500.00	
63 Cu	# 2	45	26307.9	0.0000	14.1500	ppb	0.84	500.00	
66 Zn	# 3	72	77057.1	0.0000	50.0100	ppb	0.40	500.00	
75 As	# 2	72	1943.5	0.0000	6.1870	ppb	2.50	500.00	
78 Se	# 1	72	50.4	0.0000	0.2917	ppb	4.19	500.00	
88 Sr	# 3	72	403730.5	0.0000	24.1300	ppb	0.57	500.00	
90 Zr	# 3	72	52089.2	0.0000	4.9170	ppb	1.31	50.00	
95 Mo	# 3	115	2295.8	0.0000	0.6997	ppb	3.80	500.00	
107 Ag	# 3	115	586.7	0.0000	0.0644	ppb	10.97	50.00	
111 Cd	# 3	115	870.5	0.0000	0.4597	ppb	2.37	500.00	
118 Sn	# 3	115	20675.8	0.0000	3.6760	ppb	1.46	500.00	
121 Sb	# 3	115	3949.6	0.0000	0.5218	ppb	2.49	500.00	
137 Ba	# 3	115	401679.6	0.0000	135.7000	ppb	1.08	1000.00	
182 W	# 3	159	1446.8	0.0000	0.1441	ppb	5.51	50.00	
205 Tl	# 3	159	5031.1	0.0000	0.2871	ppb	2.69	500.00	
208 Pb	# 3	159	468540.9	0.0000	19.5900	ppb	0.57	500.00	
235 U	# 3	159	176.7	0.0000	0.0057	ppb	12.91	30.00	
238 U	# 3	159	21095.6	0.0000	0.6756	ppb	1.24	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	874556.00	0.88	1796883.80	48.7	60 - 125	~~ISFail~~
45 Sc # 1	521702.06	0.44	814426.31	64.1	60 - 125	
45 Sc # 2	103541.16	0.36	168587.55	61.4	60 - 125	
45 Sc # 3	1301441.00	0.76	2150312.80	60.5	60 - 125	
72 Ge # 1	125746.47	0.44	207507.67	60.6	60 - 125	
72 Ge # 2	53140.43	0.63	87108.25	61.0	60 - 125	
72 Ge # 3	276330.59	0.56	458551.66	60.3	60 - 125	
115 In # 3	2114901.80	0.49	3329821.00	63.5	60 - 125	
159 Tb # 3	3408572.80	0.89	5173018.50	65.9	60 - 125	

cm 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03068.D\F6B03068.D#
Date Acquired:	Feb 3 2016 06:48 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B012-02
Misc Info:	
Vial Number:	2307
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	130455.0	0.0000	9.9290	ppb	2.25	50.00	
9 Be	# 3	6	1713.5	0.0000	0.7219	ppb	7.70	50.00	
11 B	# 3	6	11234.5	0.0000	5.4710	ppb	1.93	50.00	
23 Na	# 1	45	118819.9	0.0000	38.2000	ppb	1.66	50000.00	
24 Mg	# 3	45	17856110.0	0.0000	2798.0000	ppb	0.30	50000.00	
27 Al	# 3	45	117877300.0	0.0000	14070.0000	ppb	0.27	50000.00	
28 Si	# 1	45	656069.4	0.0000	1436.0000	ppb	1.91	5000.00	
31 P	# 3	45	60826.0	0.0000	115.0000	ppb	1.77	500.00	
39 K	# 2	45	745126.3	0.0000	2705.0000	ppb	0.54	50000.00	
40 Ca	# 1	45	16608640.0	0.0000	5795.0000	ppb	0.38	50000.00	
47 Ti	# 3	45	199357.0	0.0000	246.7000	ppb	0.25	500.00	
51 V	# 2	45	50232.6	0.0000	26.7300	ppb	0.58	500.00	
52 Cr	# 2	45	33060.6	0.0000	14.9400	ppb	0.24	500.00	
55 Mn	# 3	45	1769018.0	0.0000	136.3000	ppb	0.48	3000.00	
56 Fe	# 1	45	57294752.0	0.0000	13700.0000	ppb	0.05	50000.00	
59 Co	# 3	45	51490.4	0.0000	5.3860	ppb	0.70	500.00	
60 Ni	# 2	45	9146.0	0.0000	12.7500	ppb	1.40	500.00	
63 Cu	# 2	45	13226.7	0.0000	7.2940	ppb	0.67	500.00	
66 Zn	# 3	72	43455.9	0.0000	28.4500	ppb	1.03	500.00	
75 As	# 2	72	1184.7	0.0000	3.8310	ppb	2.49	500.00	
78 Se	# 1	72	23.3	0.0000	0.1353	ppb	22.04	500.00	
88 Sr	# 3	72	489761.4	0.0000	29.7100	ppb	0.58	500.00	
90 Zr	# 3	72	62179.5	0.0000	5.9620	ppb	1.73	50.00	
95 Mo	# 3	115	1385.7	0.0000	0.4206	ppb	3.92	500.00	
107 Ag	# 3	115	456.7	0.0000	0.0495	ppb	3.73	50.00	
111 Cd	# 3	115	453.1	0.0000	0.2400	ppb	4.48	500.00	
118 Sn	# 3	115	20516.7	0.0000	3.6590	ppb	0.22	500.00	
121 Sb	# 3	115	3108.2	0.0000	0.4019	ppb	3.72	500.00	
137 Ba	# 3	115	250554.2	0.0000	84.9000	ppb	0.67	1000.00	
182 W	# 3	159	1046.7	0.0000	0.0972	ppb	4.08	50.00	
205 Tl	# 3	159	3038.2	0.0000	0.1724	ppb	2.74	500.00	
208 Pb	# 3	159	224628.9	0.0000	9.4060	ppb	1.11	500.00	
235 U	# 3	159	96.7	0.0000	0.0031	ppb	7.43	30.00	
238 U	# 3	159	12152.7	0.0000	0.3896	ppb	0.85	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	863531.63	1.49	1796883.80	48.1	60 - 125	ISFail
45 Sc # 1	488323.91	1.03	814426.31	60.0	60 - 125	ISFail
45 Sc # 2	100395.82	0.53	168587.55	59.6	60 - 125	ISFail
45 Sc # 3	1260313.90	0.94	2150312.80	58.6	60 - 125	ISFail
72 Ge # 1	120084.87	0.33	207507.67	57.9	60 - 125	ISFail
72 Ge # 2	51721.95	0.76	87108.25	59.4	60 - 125	ISFail
72 Ge # 3	272273.44	0.84	458551.66	59.4	60 - 125	ISFail
115 In # 3	2108071.50	0.82	3329821.00	63.3	60 - 125	
159 Tb # 3	3401061.80	1.10	5173018.50	65.7	60 - 125	

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
7 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03070.D\F6B03070.D#
Date Acquired:	Feb 3 2016 06:57 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B012-04
Misc Info:	
Vial Number:	2309
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	170378.7	0.0000	14.8400	ppb	0.73	50.00	
9 Be	# 3	6	2569.2	0.0000	1.0880	ppb	5.50	50.00	
11 B	# 3	6	12815.8	0.0000	6.3520	ppb	1.73	50.00	
23 Na	# 1	45	115191.0	0.0000	29.4900	ppb	3.39	50000.00	
24 Mg	# 3	45	17645200.0	0.0000	2603.0000	ppb	0.88	50000.00	
27 Al	# 3	45	153418700.0	0.0000	17240.0000	ppb	0.68	50000.00	
28 Si	# 1	45	1259738.0	0.0000	2554.0000	ppb	1.24	5000.00	
31 P	# 3	45	153766.7	0.0000	309.2000	ppb	2.35	500.00	
39 K	# 2	45	1161551.0	0.0000	4012.0000	ppb	1.76	50000.00	
40 Ca	# 1	45	17127140.0	0.0000	5531.0000	ppb	0.35	50000.00	
47 Ti	# 3	45	244907.8	0.0000	285.3000	ppb	0.35	500.00	
51 V	# 2	45	75478.0	0.0000	38.0900	ppb	0.98	500.00	
52 Cr	# 2	45	46305.6	0.0000	19.7700	ppb	0.77	500.00	
55 Mn	# 3	45	5631271.0	0.0000	409.0000	ppb	1.19	3000.00	
56 Fe	# 1	45	85201024.0	0.0000	18860.0000	ppb	0.34	50000.00	
59 Co	# 3	45	83257.3	0.0000	8.2290	ppb	0.41	500.00	
60 Ni	# 2	45	12776.5	0.0000	16.8500	ppb	0.93	500.00	
63 Cu	# 2	45	28450.6	0.0000	14.8900	ppb	0.44	500.00	
66 Zn	# 3	72	75291.0	0.0000	48.1600	ppb	1.42	500.00	
75 As	# 2	72	1996.2	0.0000	6.2370	ppb	2.26	500.00	
78 Se	# 1	72	68.4	0.0000	0.3910	ppb	7.93	500.00	
88 Sr	# 3	72	455260.8	0.0000	26.8200	ppb	0.31	500.00	
90 Zr	# 3	72	42114.1	0.0000	3.9140	ppb	1.07	50.00	
95 Mo	# 3	115	2005.8	0.0000	0.5958	ppb	6.28	500.00	
107 Ag	# 3	115	587.8	0.0000	0.0629	ppb	8.76	50.00	
111 Cd	# 3	115	979.9	0.0000	0.5054	ppb	3.01	500.00	
118 Sn	# 3	115	22137.0	0.0000	3.8430	ppb	0.42	500.00	
121 Sb	# 3	115	2673.7	0.0000	0.3287	ppb	1.95	500.00	
137 Ba	# 3	115	431872.7	0.0000	142.5000	ppb	0.39	1000.00	
182 W	# 3	159	1095.6	0.0000	0.0999	ppb	11.75	50.00	
205 Tl	# 3	159	4792.2	0.0000	0.2672	ppb	1.71	500.00	
208 Pb	# 3	159	414281.6	0.0000	16.9400	ppb	0.49	500.00	
235 U	# 3	159	147.8	0.0000	0.0046	ppb	3.75	30.00	
238 U	# 3	159	20622.6	0.0000	0.6460	ppb	1.23	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	862846.00	0.64	1796883.80	48.0	60 - 125	~~ISFail~~
45 Sc # 1	527538.06	0.73	814426.31	64.8	60 - 125	
45 Sc # 2	106437.00	0.72	168587.55	63.1	60 - 125	
45 Sc # 3	1338687.80	1.19	2150312.80	62.3	60 - 125	
72 Ge # 1	128498.91	0.71	207507.67	61.9	60 - 125	
72 Ge # 2	54150.99	0.11	87108.25	62.2	60 - 125	
72 Ge # 3	280303.34	0.47	458551.66	61.1	60 - 125	
115 In # 3	2165863.50	0.28	3329821.00	65.0	60 - 125	
159 Tb # 3	3484695.30	0.20	5173018.50	67.4	60 - 125	

cm 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03069.D\F6B03069.D#
Date Acquired: Feb 3 2016 06:52 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-03
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	216387.0	0.0000	21.3300	ppb	0.92	50.00	
9 Be	# 3	6	1553.5	0.0000	0.6744	ppb	5.00	50.00	
11 B	# 3	6	26731.0	0.0000	14.5400	ppb	2.05	50.00	
23 Na	# 1	45	1155923.0	0.0000	730.5000	ppb	0.64	50000.00	
24 Mg	# 3	45	65924460.0	0.0000	10240.0000	ppb	0.69	50000.00	
27 Al	# 3	45	117782200.0	0.0000	13920.0000	ppb	0.67	50000.00	
28 Si	# 1	45	635592.6	0.0000	1309.0000	ppb	0.75	5000.00	
31 P	# 3	45	99171.4	0.0000	201.4000	ppb	0.72	500.00	
39 K	# 2	45	751030.8	0.0000	2642.0000	ppb	0.69	50000.00	
40 Ca	# 1	45	1132234000.0	0.0000	372000.0000	ppb	0.69	50000.00	>LRS
47 Ti	# 3	45	195076.9	0.0000	239.0000	ppb	0.16	500.00	
51 V	# 2	45	67290.8	0.0000	34.8700	ppb	0.25	500.00	
52 Cr	# 2	45	26613.9	0.0000	11.6500	ppb	0.45	500.00	
55 Mn	# 3	45	1492750.0	0.0000	113.9000	ppb	0.74	3000.00	
56 Fe	# 1	45	45088220.0	0.0000	10140.0000	ppb	0.32	50000.00	
59 Co	# 3	45	79037.3	0.0000	8.2170	ppb	1.30	500.00	
60 Ni	# 2	45	14523.7	0.0000	19.7200	ppb	0.35	500.00	
63 Cu	# 2	45	13799.0	0.0000	7.3800	ppb	0.58	500.00	
66 Zn	# 3	72	36363.2	0.0000	24.8500	ppb	1.26	500.00	
75 As	# 2	72	2102.4	0.0000	7.0100	ppb	3.67	500.00	
78 Se	# 1	72	33.6	0.0000	0.1978	ppb	7.64	500.00	
88 Sr	# 3	72	16275740.0	0.0000	1034.0000	ppb	0.44	500.00	>LRS
90 Zr	# 3	72	102721.2	0.0000	10.3200	ppb	0.28	50.00	
95 Mo	# 3	115	1296.8	0.0000	0.4082	ppb	4.39	500.00	
107 Ag	# 3	115	312.2	0.0000	0.0340	ppb	8.37	50.00	
111 Cd	# 3	115	836.2	0.0000	0.4598	ppb	2.22	500.00	
118 Sn	# 3	115	19144.8	0.0000	3.5430	ppb	1.20	500.00	
121 Sb	# 3	115	3653.9	0.0000	0.5008	ppb	5.80	500.00	
137 Ba	# 3	115	2050847.0	0.0000	721.5000	ppb	0.31	1000.00	
182 W	# 3	159	3059.4	0.0000	0.3477	ppb	2.70	50.00	
205 Tl	# 3	159	2873.8	0.0000	0.1687	ppb	6.33	500.00	
208 Pb	# 3	159	164648.9	0.0000	7.1280	ppb	0.29	500.00	
235 U	# 3	159	236.7	0.0000	0.0080	ppb	18.73	30.00	
238 U	# 3	159	33923.9	0.0000	1.1270	ppb	0.89	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	836315.44	0.88	1796883.80	46.5	60 - 125	~~ISFail~~
45 Sc # 1	519253.13	0.97	814426.31	63.8	60 - 125	
45 Sc # 2	103529.80	0.45	168587.55	61.4	60 - 125	
45 Sc # 3	1272654.00	0.80	2150312.80	59.2	60 - 125	~~ISFail~~
72 Ge # 1	121173.24	0.45	207507.67	58.4	60 - 125	ISFail
72 Ge # 2	50855.71	0.53	87108.25	58.4	60 - 125	ISFail
72 Ge # 3	260289.30	0.41	458551.66	56.8	60 - 125	~~ISFail~~
115 In # 3	2031171.00	0.49	3329821.00	61.0	60 - 125	
159 Tb # 3	3287920.80	0.55	5173018.50	63.6	60 - 125	

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

2 :Element Failures
5 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03071.D\F6B03071.D#
Date Acquired: Feb 3 2016 07:01 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-05
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	150568.0	0.0000	13.1600	ppb	1.93	50.00	
9 Be	# 3	6	2156.9	0.0000	0.9495	ppb	7.02	50.00	
11 B	# 3	6	13256.2	0.0000	6.8960	ppb	2.04	50.00	
23 Na	# 1	45	166556.6	0.0000	69.6800	ppb	1.90	50000.00	
24 Mg	# 3	45	31431540.0	0.0000	4893.0000	ppb	0.33	50000.00	
27 Al	# 3	45	138342700.0	0.0000	16400.0000	ppb	0.13	50000.00	
28 Si	# 1	45	1104445.0	0.0000	2365.0000	ppb	0.71	5000.00	
31 P	# 3	45	135996.4	0.0000	286.7000	ppb	0.52	500.00	
39 K	# 2	45	917753.9	0.0000	3331.0000	ppb	0.54	50000.00	
40 Ca	# 1	45	563469500.0	0.0000	192400.0000	ppb	0.32	50000.00	>LRS
47 Ti	# 3	45	182949.3	0.0000	224.8000	ppb	0.62	500.00	
51 V	# 2	45	66331.6	0.0000	35.2700	ppb	0.16	500.00	
52 Cr	# 2	45	35038.5	0.0000	15.7600	ppb	0.62	500.00	
55 Mn	# 3	45	2278223.0	0.0000	174.4000	ppb	0.79	3000.00	
56 Fe	# 1	45	62692848.0	0.0000	14660.0000	ppb	0.46	50000.00	
59 Co	# 3	45	72090.5	0.0000	7.5100	ppb	1.03	500.00	
60 Ni	# 2	45	12259.4	0.0000	17.0500	ppb	0.36	500.00	
63 Cu	# 2	45	18528.5	0.0000	10.2000	ppb	0.64	500.00	
66 Zn	# 3	72	52861.4	0.0000	36.2400	ppb	2.10	500.00	
75 As	# 2	72	2151.5	0.0000	7.2180	ppb	0.84	500.00	
78 Se	# 1	72	36.7	0.0000	0.2251	ppb	6.50	500.00	
88 Sr	# 3	72	3219322.0	0.0000	204.0000	ppb	0.68	500.00	
90 Zr	# 3	72	46103.7	0.0000	4.6090	ppb	0.75	50.00	
95 Mo	# 3	115	1815.7	0.0000	0.5711	ppb	3.16	500.00	
107 Ag	# 3	115	322.2	0.0000	0.0350	ppb	19.73	50.00	
111 Cd	# 3	115	839.9	0.0000	0.4590	ppb	6.43	500.00	
118 Sn	# 3	115	18333.7	0.0000	3.3700	ppb	0.71	500.00	
121 Sb	# 3	115	2283.6	0.0000	0.2928	ppb	1.27	500.00	
137 Ba	# 3	115	633128.2	0.0000	221.3000	ppb	0.58	1000.00	
182 W	# 3	159	1089.0	0.0000	0.1067	ppb	5.73	50.00	
205 Tl	# 3	159	4137.5	0.0000	0.2444	ppb	0.65	500.00	
208 Pb	# 3	159	272298.3	0.0000	11.8000	ppb	0.25	500.00	
235 U	# 3	159	150.0	0.0000	0.0050	ppb	12.68	30.00	
238 U	# 3	159	19588.6	0.0000	0.6507	ppb	0.66	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	829068.75	0.73	1796883.80	46.1	60 - 125	~~ISFail~~
45 Sc # 1	499466.97	0.74	814426.31	61.3	60 - 125	
45 Sc # 2	100916.49	0.30	168587.55	59.9	60 - 125	ISFail
45 Sc # 3	1269165.90	0.57	2150312.80	59.0	60 - 125	ISFail
72 Ge # 1	117114.52	0.59	207507.67	56.4	60 - 125	ISFail
72 Ge # 2	50562.42	0.38	87108.25	58.0	60 - 125	ISFail
72 Ge # 3	260841.38	0.78	458551.66	56.9	60 - 125	ISFail
115 In # 3	2044306.90	0.41	3329821.00	61.4	60 - 125	
159 Tb # 3	3286157.30	0.33	5173018.50	63.5	60 - 125	

CPW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
6 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03072.D\F6B03072.D#
Date Acquired: Feb 3 2016 07:05 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-06
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	161426.1	0.0000	14.8100	ppb	2.20	50.00	
9 Be	# 3	6	2432.5	0.0000	1.0860	ppb	0.56	50.00	
11 B	# 3	6	14974.5	0.0000	7.9980	ppb	1.94	50.00	
23 Na	# 1	45	368616.7	0.0000	211.7000	ppb	0.61	50000.00	
24 Mg	# 3	45	35409960.0	0.0000	5573.0000	ppb	0.41	50000.00	
27 Al	# 3	45	136592700.0	0.0000	16370.0000	ppb	0.35	50000.00	
28 Si	# 1	45	1218750.0	0.0000	2618.0000	ppb	0.92	5000.00	
31 P	# 3	45	124299.0	0.0000	262.9000	ppb	0.41	500.00	
39 K	# 2	45	880879.1	0.0000	3234.0000	ppb	0.92	50000.00	
40 Ca	# 1	45	595138110.0	0.0000	203800.0000	ppb	0.35	50000.00	>LRS
47 Ti	# 3	45	196366.4	0.0000	243.9000	ppb	1.01	500.00	
51 V	# 2	45	66646.5	0.0000	35.8800	ppb	1.46	500.00	
52 Cr	# 2	45	36775.4	0.0000	16.7500	ppb	1.53	500.00	
55 Mn	# 3	45	2679919.0	0.0000	207.4000	ppb	0.53	3000.00	
56 Fe	# 1	45	62186560.0	0.0000	14580.0000	ppb	0.04	50000.00	
59 Co	# 3	45	71350.2	0.0000	7.5150	ppb	1.44	500.00	
60 Ni	# 2	45	11181.0	0.0000	15.7300	ppb	0.86	500.00	
63 Cu	# 2	45	16967.2	0.0000	9.4490	ppb	1.06	500.00	
66 Zn	# 3	72	52028.3	0.0000	36.2300	ppb	0.42	500.00	
75 As	# 2	72	1690.1	0.0000	5.7390	ppb	0.82	500.00	
78 Se	# 1	72	34.9	0.0000	0.2126	ppb	7.11	500.00	
88 Sr	# 3	72	3290728.0	0.0000	211.8000	ppb	0.63	500.00	
90 Zr	# 3	72	82325.9	0.0000	8.3800	ppb	0.20	50.00	
95 Mo	# 3	115	2946.0	0.0000	0.9540	ppb	1.79	500.00	
107 Ag	# 3	115	324.5	0.0000	0.0362	ppb	15.03	50.00	
111 Cd	# 3	115	1055.3	0.0000	0.5905	ppb	6.19	500.00	
118 Sn	# 3	115	18532.8	0.0000	3.4890	ppb	1.52	500.00	
121 Sb	# 3	115	2043.6	0.0000	0.2643	ppb	5.33	500.00	
137 Ba	# 3	115	391044.7	0.0000	139.9000	ppb	0.46	1000.00	
182 W	# 3	159	952.3	0.0000	0.0918	ppb	4.16	50.00	
205 Tl	# 3	159	4513.2	0.0000	0.2711	ppb	2.89	500.00	
208 Pb	# 3	159	270421.2	0.0000	11.9100	ppb	0.67	500.00	
235 U	# 3	159	173.3	0.0000	0.0059	ppb	0.22	30.00	
238 U	# 3	159	22481.2	0.0000	0.7588	ppb	1.88	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	818620.44	1.33	1796883.80	45.6	60 - 125	ISFail
45 Sc # 1	497995.88	0.49	814426.31	61.1	60 - 125	
45 Sc # 2	99694.99	0.89	168587.55	59.1	60 - 125	ISFail
45 Sc # 3	1255393.00	0.44	2150312.80	58.4	60 - 125	ISFail
72 Ge # 1	117711.60	0.20	207507.67	56.7	60 - 125	ISFail
72 Ge # 2	49749.69	1.06	87108.25	57.1	60 - 125	ISFail
72 Ge # 3	256776.38	0.55	458551.66	56.0	60 - 125	ISFail
115 In # 3	1996706.60	0.27	3329821.00	60.0	60 - 125	ISFail
159 Tb # 3	3235069.80	0.22	5173018.50	62.5	60 - 125	

CC 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures
7 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03073.D\F6B03073.D#
Date Acquired: Feb 3 2016 07:10 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-07
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	180887.2	0.0000	17.5200	ppb	1.24	50.00	
9 Be	# 3	6	2617.0	0.0000	1.1780	ppb	1.63	50.00	
11 B	# 3	6	16461.7	0.0000	8.9460	ppb	1.67	50.00	
23 Na	# 1	45	117724.6	0.0000	34.8800	ppb	1.65	50000.00	
24 Mg	# 3	45	22267810.0	0.0000	3483.0000	ppb	1.12	50000.00	
27 Al	# 3	45	172239810.0	0.0000	20520.0000	ppb	1.18	50000.00	
28 Si	# 1	45	952113.4	0.0000	2022.0000	ppb	0.88	5000.00	
31 P	# 3	45	146101.8	0.0000	311.6000	ppb	1.47	500.00	
39 K	# 2	45	1253851.0	0.0000	4549.0000	ppb	0.66	50000.00	
40 Ca	# 1	45	8472641.0	0.0000	2864.0000	ppb	0.32	50000.00	
47 Ti	# 3	45	277262.2	0.0000	342.5000	ppb	1.62	500.00	
51 V	# 2	45	82459.7	0.0000	43.7000	ppb	0.25	500.00	
52 Cr	# 2	45	49897.5	0.0000	22.3400	ppb	0.55	500.00	
55 Mn	# 3	45	6305913.0	0.0000	485.5000	ppb	0.91	3000.00	
56 Fe	# 1	45	92600544.0	0.0000	21480.0000	ppb	0.38	50000.00	
59 Co	# 3	45	92643.4	0.0000	9.7170	ppb	1.01	500.00	
60 Ni	# 2	45	13301.2	0.0000	18.4000	ppb	0.79	500.00	
63 Cu	# 2	45	30202.9	0.0000	16.5800	ppb	1.05	500.00	
66 Zn	# 3	72	76601.3	0.0000	51.7800	ppb	0.97	500.00	
75 As	# 2	72	2303.8	0.0000	7.5470	ppb	1.95	500.00	
78 Se	# 1	72	57.1	0.0000	0.3428	ppb	9.04	500.00	
88 Sr	# 3	72	905648.9	0.0000	56.3800	ppb	1.06	500.00	
90 Zr	# 3	72	49589.4	0.0000	4.8740	ppb	3.69	50.00	
95 Mo	# 3	115	2758.1	0.0000	0.8704	ppb	2.80	500.00	
107 Ag	# 3	115	582.3	0.0000	0.0661	ppb	8.71	50.00	
111 Cd	# 3	115	1055.3	0.0000	0.5759	ppb	7.81	500.00	
118 Sn	# 3	115	20456.7	0.0000	3.7570	ppb	1.82	500.00	
121 Sb	# 3	115	2498.1	0.0000	0.3243	ppb	3.40	500.00	
137 Ba	# 3	115	430443.6	0.0000	150.2000	ppb	0.48	1000.00	
182 W	# 3	159	894.5	0.0000	0.0824	ppb	15.06	50.00	
205 Tl	# 3	159	5291.3	0.0000	0.3119	ppb	0.63	500.00	
208 Pb	# 3	159	425782.2	0.0000	18.3800	ppb	0.82	500.00	
235 U	# 3	159	157.8	0.0000	0.0052	ppb	6.70	30.00	
238 U	# 3	159	22775.0	0.0000	0.7531	ppb	0.16	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	811939.00	0.89	1796883.80	45.2	60 - 125	~~ISFail~~
45 Sc # 1	503505.16	0.72	814426.31	61.8	60 - 125	
45 Sc # 2	101545.34	0.27	168587.55	60.2	60 - 125	
45 Sc # 3	1262858.90	1.14	2150312.80	58.7	60 - 125	ISFail
72 Ge # 1	121873.09	0.70	207507.67	58.7	60 - 125	ISFail
72 Ge # 2	51813.46	0.66	87108.25	59.5	60 - 125	ISFail
72 Ge # 3	265394.75	0.60	458551.66	57.9	60 - 125	ISFail
115 In # 3	2047208.90	0.69	3329821.00	61.5	60 - 125	
159 Tb # 3	3302142.80	0.35	5173018.50	63.8	60 - 125	

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
5 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B03.B\F6B03074.D\F6B03074.D#
Date Acquired:	Feb 3 2016 07:14 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B012-08
Misc Info:	
Vial Number:	2401
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 03 2016 01:48 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	142215.2	0.0000	13.0100	ppb	0.96	50.00	
9 Be	# 3	6	1878.0	0.0000	0.8668	ppb	3.30	50.00	
11 B	# 3	6	14778.8	0.0000	8.2030	ppb	1.29	50.00	
23 Na	# 1	45	325378.8	0.0000	193.6000	ppb	0.38	50000.00	
24 Mg	# 3	45	25364730.0	0.0000	4190.0000	ppb	1.03	50000.00	
27 Al	# 3	45	128090600.0	0.0000	16110.0000	ppb	0.84	50000.00	
28 Si	# 1	45	1066562.0	0.0000	2413.0000	ppb	0.58	5000.00	
31 P	# 3	45	166011.7	0.0000	378.9000	ppb	0.71	500.00	
39 K	# 2	45	842918.5	0.0000	3249.0000	ppb	0.76	50000.00	
40 Ca	# 1	45	548183490.0	0.0000	197800.0000	ppb	0.30	50000.00	>LRS
47 Ti	# 3	45	214755.6	0.0000	280.0000	ppb	0.30	500.00	
51 V	# 2	45	55259.1	0.0000	31.1600	ppb	0.19	500.00	
52 Cr	# 2	45	33874.0	0.0000	16.1900	ppb	0.21	500.00	
55 Mn	# 3	45	2669351.0	0.0000	216.9000	ppb	0.94	3000.00	
56 Fe	# 1	45	58910760.0	0.0000	14550.0000	ppb	0.19	50000.00	
59 Co	# 3	45	65353.4	0.0000	7.2230	ppb	1.00	500.00	
60 Ni	# 2	45	10079.1	0.0000	14.8800	ppb	0.90	500.00	
63 Cu	# 2	45	18031.0	0.0000	10.5500	ppb	0.76	500.00	
66 Zn	# 3	72	50435.1	0.0000	36.6300	ppb	0.73	500.00	
75 As	# 2	72	1687.2	0.0000	6.0430	ppb	2.82	500.00	
78 Se	# 1	72	29.1	0.0000	0.1846	ppb	19.44	500.00	
88 Sr	# 3	72	2605957.0	0.0000	174.9000	ppb	0.32	500.00	
90 Zr	# 3	72	39008.9	0.0000	4.1290	ppb	2.25	50.00	
95 Mo	# 3	115	1619.0	0.0000	0.5401	ppb	4.27	500.00	
107 Ag	# 3	115	304.5	0.0000	0.0351	ppb	8.69	50.00	
111 Cd	# 3	115	739.4	0.0000	0.4288	ppb	1.82	500.00	
118 Sn	# 3	115	17649.4	0.0000	3.4450	ppb	0.74	500.00	
121 Sb	# 3	115	2095.8	0.0000	0.2840	ppb	1.22	500.00	
137 Ba	# 3	115	556245.9	0.0000	206.4000	ppb	0.11	1000.00	
182 W	# 3	159	1057.9	0.0000	0.1104	ppb	4.00	50.00	
205 Tl	# 3	159	3622.9	0.0000	0.2261	ppb	6.33	500.00	
208 Pb	# 3	159	241991.7	0.0000	11.1000	ppb	0.52	500.00	
235 U	# 3	159	173.3	0.0000	0.0062	ppb	10.09	30.00	
238 U	# 3	159	20829.6	0.0000	0.7322	ppb	1.09	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	789476.19	0.84	1796883.80	43.9	60 - 125	ISFail
45 Sc	# 1	472730.78	0.53	814426.31	58.0	60 - 125	ISFail
45 Sc	# 2	94976.35	0.36	168587.55	56.3	60 - 125	ISFail
45 Sc	# 3	1195999.60	0.18	2150312.80	55.6	60 - 125	ISFail
72 Ge	# 1	112172.43	0.20	207507.67	54.1	60 - 125	ISFail
72 Ge	# 2	47219.05	0.70	87108.25	54.2	60 - 125	ISFail
72 Ge	# 3	246224.86	0.64	458551.66	53.7	60 - 125	ISFail
115 In	# 3	1925865.80	0.38	3329821.00	57.8	60 - 125	ISFail
159 Tb	# 3	3106072.00	0.36	5173018.50	60.0	60 - 125	

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed

8 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail

ISTD: Fail

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03076.D\F6B03076.D#
Date Acquired: Feb 3 2016 07:23 pm
Operator: CCapul
Sample Name: CCV7
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:48 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.07 ppb	0.46	25.00	90 - 110	
9 Be	27.02 ppb	0.82	25.00	90 - 110	
11 B	25.58 ppb	0.75	25.00	90 - 110	
23 Na	23180.00 ppb	0.28	25000.00	90 - 110	
24 Mg	22920.00 ppb	1.19	25000.00	90 - 110	
27 Al	23410.00 ppb	1.39	25000.00	90 - 110	
28 Si	2435.00 ppb	0.98	2500.00	90 - 110	
31 P	258.50 ppb	2.01	250.00	90 - 110	
39 K	26100.00 ppb	0.59	25000.00	90 - 110	
40 Ca	24550.00 ppb	0.15	25000.00	90 - 110	
47 Ti	256.80 ppb	1.24	250.00	90 - 110	
51 V	250.20 ppb	0.87	250.00	90 - 110	
52 Cr	245.40 ppb	1.14	250.00	90 - 110	
55 Mn	1479.00 ppb	0.84	1500.00	90 - 110	
56 Fe	24140.00 ppb	0.07	25000.00	90 - 110	
59 Co	258.00 ppb	1.12	250.00	90 - 110	
60 Ni	251.50 ppb	0.79	250.00	90 - 110	
63 Cu	251.30 ppb	0.88	250.00	90 - 110	
66 Zn	244.50 ppb	0.87	250.00	90 - 110	
75 As	253.90 ppb	0.55	250.00	90 - 110	
78 Se	253.90 ppb	1.27	250.00	90 - 110	
88 Sr	265.70 ppb	0.23	250.00	90 - 110	
90 Zr	27.26 ppb	0.68	25.00	90 - 110	
95 Mo	240.10 ppb	0.54	250.00	90 - 110	
107 Ag	24.33 ppb	0.96	25.00	90 - 110	
111 Cd	245.80 ppb	0.45	250.00	90 - 110	
118 Sn	241.40 ppb	0.74	250.00	90 - 110	
121 Sb	248.80 ppb	1.66	250.00	90 - 110	
137 Ba	507.60 ppb	0.46	500.00	90 - 110	
182 W	25.12 ppb	0.69	25.00	90 - 110	
205 Tl	250.70 ppb	0.61	250.00	90 - 110	
208 Pb	251.10 ppb	0.41	250.00	90 - 110	
235 U	1.56 ppb	0.45	1.80	90 - 110	Fail
238 U	246.40 ppb	0.46	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	763822.19	0.83	1796883.80	42.5	60 - 125	ISFail
45 Sc	449162.84	0.87	814426.31	55.2	60 - 125	ISFail
45 Sc	89512.51	0.63	168587.55	53.1	60 - 125	ISFail
45 Sc	1121736.10	0.72	2150312.80	52.2	60 - 125	ISFail
72 Ge	110700.18	0.63	207507.67	53.3	60 - 125	ISFail
72 Ge	46828.83	0.74	87108.25	53.8	60 - 125	ISFail
72 Ge	241356.97	0.20	458551.66	52.6	60 - 125	ISFail
115 In	1867800.10	0.94	3329821.00	56.1	60 - 125	ISFail
159 Tb	3039974.80	0.43	5173018.50	58.8	60 - 125	ISFail

2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03077.D\F6B03077.D#
Date Acquired: Feb 3 2016 07:27 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB7
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1398	ppb	44303.4	46.16	0.20	
9 Be	0.0017	ppb	25.6	483.24	0.10	
11 B	0.0660	ppb	1294.5	71.48	5.00	
23 Na	-17.0200	ppb	36886.5	4.89	40.00	
24 Mg	0.5194	ppb	13804.7	29.69	10.00	
27 Al	1.1560	ppb	10716.4	21.14	20.00	
28 Si	1.0610	ppb	914.5	10.03	20.00	
31 P	2.8880	ppb	10463.2	32.02	10.00	
39 K	16.1500	ppb	20834.4	7.55	20.00	
40 Ca	2.5870	ppb	23824.3	11.97	25.00	
47 Ti	-0.0289	ppb	64.4	84.27	0.50	
51 V	0.0405	ppb	879.8	34.36	0.50	
52 Cr	0.0057	ppb	160.0	84.77	0.20	
55 Mn	0.0303	ppb	2928.2	27.44	0.20	
56 Fe	7.3530	ppb	33277.7	7.01	10.00	
59 Co	-0.0219	ppb	291.1	8.62	0.20	
60 Ni	0.0214	ppb	108.9	98.27	0.20	
63 Cu	-0.0322	ppb	92.9	9.09	0.40	
66 Zn	-0.1163	ppb	382.2	14.79	2.00	
75 As	0.0530	ppb	45.8	22.56	0.20	
78 Se	0.0832	ppb	14.0	32.42	0.20	
88 Sr	0.0027	ppb	451.1	170.60	0.20	
90 Zr	-0.0010	ppb	214.5	140.78	2.00	
95 Mo	0.1741	ppb	535.6	17.35	0.40	
107 Ag	-0.0009	ppb	22.2	74.51	0.20	
111 Cd	0.0216	ppb	37.5	47.36	0.20	
118 Sn	0.0847	ppb	503.4	13.77	0.20	
121 Sb	0.0514	ppb	624.5	15.35	0.40	
137 Ba	0.0019	ppb	123.3	527.15	0.20	
182 W	0.0104	ppb	276.7	58.45	1.00	
205 Tl	0.0317	ppb	534.5	7.78	0.20	
208 Pb	0.0114	ppb	578.9	25.05	0.10	
235 U	0.0003	ppb	12.2	23.39	1.00	
238 U	0.0338	ppb	962.3	8.50	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	754850.6	0.37	1796883.80	42.0	60 - 125	~~ISFail~~
45 Sc	433267.1	0.52	814426.31	53.2	60 - 125	ISFail
45 Sc	86749.5	0.84	168587.55	51.5	60 - 125	ISFail
45 Sc	1064047.3	0.33	2150312.80	49.5	60 - 125	ISFail
72 Ge	111742.6	0.34	207507.67	53.8	60 - 125	ISFail
72 Ge	46229.1	0.66	87108.25	53.1	60 - 125	ISFail
72 Ge	238995.0	0.90	458551.66	52.1	60 - 125	ISFail
115 In	1918658.5	0.78	3329821.00	57.6	60 - 125	ISFail
159 Tb	3009847.5	0.80	5173018.50	58.2	60 - 125	~~ISFail~~

Cw 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
9 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

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Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03079.D\F6B03079.D#
Date Acquired: Feb 3 2016 07:35 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-09M
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\B\IF6B03.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	419839.3	0.0000	55.0500	ppb	1.80	50.00	>LRS
9 Be	# 3	6	81740.0	0.0000	41.4400	ppb	1.51	50.00	
11 B	# 3	6	70286.4	0.0000	45.4600	ppb	2.24	50.00	
23 Na	# 1	45	5234779.0	0.0000	3887.0000	ppb	0.13	50000.00	
24 Mg	# 3	45	48160648.0	0.0000	8230.0000	ppb	0.82	50000.00	
27 Al	# 3	45	171251010.0	0.0000	22280.0000	ppb	0.95	50000.00	
28 Si	# 1	45	1290898.0	0.0000	2972.0000	ppb	0.59	5000.00	
31 P	# 3	45	156636.7	0.0000	369.2000	ppb	1.12	500.00	
39 K	# 2	45	1933607.0	0.0000	7815.0000	ppb	0.48	50000.00	
40 Ca	# 1	45	256673600.0	0.0000	94240.0000	ppb	0.26	50000.00	>LRS
47 Ti	# 3	45	267159.9	0.0000	360.3000	ppb	0.52	500.00	
51 V	# 2	45	119781.0	0.0000	70.5500	ppb	0.34	500.00	
52 Cr	# 2	45	106402.8	0.0000	52.8200	ppb	0.39	500.00	
55 Mn	# 3	45	4313638.0	0.0000	362.7000	ppb	1.42	3000.00	
56 Fe	# 1	45	78947232.0	0.0000	19840.0000	ppb	0.36	50000.00	
59 Co	# 3	45	401192.9	0.0000	46.1700	ppb	0.67	500.00	
60 Ni	# 2	45	34243.7	0.0000	52.7000	ppb	0.49	500.00	
63 Cu	# 2	45	76895.1	0.0000	46.8800	ppb	0.23	500.00	
66 Zn	# 3	72	152877.0	0.0000	116.2000	ppb	0.19	500.00	
75 As	# 2	72	11121.2	0.0000	41.5100	ppb	0.70	500.00	
78 Se	# 1	72	5327.2	0.0000	36.5600	ppb	1.88	500.00	
88 Sr	# 3	72	3009144.0	0.0000	209.8000	ppb	0.06	500.00	
90 Zr	# 3	72	113699.5	0.0000	12.5500	ppb	0.78	50.00	
95 Mo	# 3	115	98102.1	0.0000	34.0500	ppb	0.58	500.00	
107 Ag	# 3	115	260677.9	0.0000	34.1000	ppb	0.62	50.00	
111 Cd	# 3	115	61466.1	0.0000	36.5800	ppb	0.84	500.00	
118 Sn	# 3	115	194675.4	0.0000	39.1000	ppb	0.69	500.00	
121 Sb	# 3	115	148865.2	0.0000	24.1300	ppb	0.90	500.00	
137 Ba	# 3	115	906662.3	0.0000	344.9000	ppb	1.14	1000.00	
182 W	# 3	159	1157.9	0.0000	0.1267	ppb	9.95	50.00	
205 Tl	# 3	159	630322.2	0.0000	40.7900	ppb	0.12	500.00	
208 Pb	# 3	159	1124483.0	0.0000	52.7700	ppb	0.24	500.00	
235 U	# 3	159	7944.9	0.0000	0.2947	ppb	3.70	30.00	
238 U	# 3	159	1079113.0	0.0000	38.8300	ppb	0.42	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	727813.50	1.82	1796883.80	40.5	60 - 125	ISFail
45 Sc # 1	464555.88	0.33	814426.31	57.0	60 - 125	ISFail
45 Sc # 2	91768.31	0.38	168587.55	54.4	60 - 125	ISFail
45 Sc # 3	1156402.10	0.90	2150312.80	53.8	60 - 125	ISFail
72 Ge # 1	110084.42	0.33	207507.67	53.1	60 - 125	ISFail
72 Ge # 2	46062.02	1.19	87108.25	52.9	60 - 125	ISFail
72 Ge # 3	237051.11	0.17	458551.66	51.7	60 - 125	ISFail
115 In # 3	1878355.10	0.77	3329821.00	56.4	60 - 125	ISFail
159 Tb # 3	3038797.80	0.55	5173018.50	58.7	60 - 125	ISFail

CW 2/12/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

2 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Revised Report

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03080.D\F6B03080.D#
Date Acquired: Feb 3 2016 07:40 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-09A
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\B\IF6B03.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	421236.7	0.0000	56.6700	ppb	2.44	50.00	>LRS
9 Be	# 3	6	86171.1	0.0000	44.7000	ppb	2.24	50.00	
11 B	# 3	6	74144.7	0.0000	49.1200	ppb	2.28	50.00	
23 Na	# 1	45	5594231.0	0.0000	4479.0000	ppb	0.29	50000.00	
24 Mg	# 3	45	47866128.0	0.0000	8680.0000	ppb	1.46	50000.00	
27 Al	# 3	45	149474210.0	0.0000	20640.0000	ppb	1.10	50000.00	
28 Si	# 1	45	740465.9	0.0000	1835.0000	ppb	0.75	5000.00	
31 P	# 3	45	145226.2	0.0000	362.8000	ppb	0.15	500.00	
39 K	# 2	45	1896086.0	0.0000	8156.0000	ppb	0.44	50000.00	
40 Ca	# 1	45	267428300.0	0.0000	105700.0000	ppb	0.50	50000.00	>LRS
47 Ti	# 3	45	235469.6	0.0000	337.0000	ppb	0.83	500.00	
51 V	# 2	45	119460.6	0.0000	74.8800	ppb	0.38	500.00	
52 Cr	# 2	45	105992.4	0.0000	55.9800	ppb	1.02	500.00	
55 Mn	# 3	45	4015813.0	0.0000	358.3000	ppb	1.02	3000.00	
56 Fe	# 1	45	75240600.0	0.0000	20360.0000	ppb	0.11	50000.00	
59 Co	# 3	45	412261.2	0.0000	50.3500	ppb	1.34	500.00	
60 Ni	# 2	45	34415.0	0.0000	56.3600	ppb	0.66	500.00	
63 Cu	# 2	45	80505.3	0.0000	52.2300	ppb	0.69	500.00	
66 Zn	# 3	72	153122.0	0.0000	123.6000	ppb	0.25	500.00	
75 As	# 2	72	11881.4	0.0000	46.4500	ppb	0.60	500.00	
78 Se	# 1	72	5636.0	0.0000	41.2400	ppb	1.50	500.00	
88 Sr	# 3	72	3047411.0	0.0000	225.7000	ppb	0.22	500.00	
90 Zr	# 3	72	89657.3	0.0000	10.5100	ppb	1.09	50.00	
95 Mo	# 3	115	108533.7	0.0000	39.8600	ppb	0.53	500.00	
107 Ag	# 3	115	266014.7	0.0000	36.8200	ppb	0.77	50.00	
111 Cd	# 3	115	64154.6	0.0000	40.3900	ppb	1.50	500.00	
118 Sn	# 3	115	203682.0	0.0000	43.2900	ppb	0.45	500.00	
121 Sb	# 3	115	235886.0	0.0000	40.4900	ppb	0.56	500.00	
137 Ba	# 3	115	872941.4	0.0000	351.4000	ppb	0.78	1000.00	
182 W	# 3	159	1043.4	0.0000	0.1177	ppb	10.77	50.00	
205 Tl	# 3	159	662215.3	0.0000	44.7600	ppb	0.40	500.00	
208 Pb	# 3	159	1165349.0	0.0000	57.1300	ppb	0.43	500.00	
235 U	# 3	159	8411.9	0.0000	0.3260	ppb	2.88	30.00	
238 U	# 3	159	1138370.0	0.0000	42.7900	ppb	0.46	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	711464.75	2.35	1796883.80	39.6	60 - 125	~~ISFail~~
45 Sc # 1	431527.88	0.53	814426.31	53.0	60 - 125	ISFail
45 Sc # 2	86257.62	0.59	168587.55	51.2	60 - 125	ISFail
45 Sc # 3	1089706.40	1.08	2150312.80	50.7	60 - 125	ISFail
72 Ge # 1	103265.18	0.46	207507.67	49.8	60 - 125	ISFail
72 Ge # 2	43982.13	0.60	87108.25	50.5	60 - 125	ISFail
72 Ge # 3	223155.94	0.14	458551.66	48.7	60 - 125	ISFail
115 In # 3	1775188.80	0.73	3329821.00	53.3	60 - 125	ISFail
159 Tb # 3	2908923.00	0.09	5173018.50	56.2	60 - 125	~~ISFail~~

CW 2/12/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

2 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Revised Report

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03081.D\F6B03081.D#
Date Acquired: Feb 3 2016 07:44 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-09
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\B\IF6B03.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	151277.4	0.0000	16.4400	ppb	2.02	50.00	
9 Be	# 3	6	1904.6	0.0000	0.9764	ppb	3.42	50.00	
11 B	# 3	6	14203.8	0.0000	8.7960	ppb	2.22	50.00	
23 Na	# 1	45	630078.7	0.0000	468.9000	ppb	0.34	50000.00	
24 Mg	# 3	45	26140350.0	0.0000	4816.0000	ppb	0.40	50000.00	
27 Al	# 3	45	118545700.0	0.0000	16630.0000	ppb	0.21	50000.00	
28 Si	# 1	45	726125.6	0.0000	1820.0000	ppb	0.28	5000.00	
31 P	# 3	45	142904.5	0.0000	362.8000	ppb	0.55	500.00	
39 K	# 2	45	827399.2	0.0000	3572.0000	ppb	1.07	50000.00	
40 Ca	# 1	45	252056400.0	0.0000	100800.0000	ppb	0.09	50000.00	>LRS
47 Ti	# 3	45	204528.8	0.0000	297.5000	ppb	0.31	500.00	
51 V	# 2	45	53680.6	0.0000	33.8800	ppb	1.29	500.00	
52 Cr	# 2	45	31917.4	0.0000	17.0600	ppb	1.44	500.00	
55 Mn	# 3	45	3514587.0	0.0000	318.6000	ppb	0.30	3000.00	
56 Fe	# 1	45	58438008.0	0.0000	15990.0000	ppb	0.14	50000.00	
59 Co	# 3	45	61485.8	0.0000	7.5830	ppb	1.21	500.00	
60 Ni	# 2	45	9159.1	0.0000	15.1100	ppb	0.88	500.00	
63 Cu	# 2	45	16184.1	0.0000	10.5900	ppb	1.55	500.00	
66 Zn	# 3	72	54892.5	0.0000	44.1900	ppb	0.94	500.00	
75 As	# 2	72	1305.4	0.0000	5.1150	ppb	3.42	500.00	
78 Se	# 1	72	33.1	0.0000	0.2361	ppb	3.91	500.00	
88 Sr	# 3	72	2421502.0	0.0000	179.9000	ppb	0.28	500.00	
90 Zr	# 3	72	76656.6	0.0000	9.0050	ppb	0.55	50.00	
95 Mo	# 3	115	1712.4	0.0000	0.6206	ppb	5.11	500.00	
107 Ag	# 3	115	353.4	0.0000	0.0452	ppb	9.55	50.00	
111 Cd	# 3	115	755.9	0.0000	0.4753	ppb	3.97	500.00	
118 Sn	# 3	115	16271.0	0.0000	3.4430	ppb	1.56	500.00	
121 Sb	# 3	115	1893.5	0.0000	0.2772	ppb	6.02	500.00	
137 Ba	# 3	115	763293.3	0.0000	307.0000	ppb	0.71	1000.00	
182 W	# 3	159	896.7	0.0000	0.0985	ppb	7.75	50.00	
205 Tl	# 3	159	3897.4	0.0000	0.2626	ppb	1.42	500.00	
208 Pb	# 3	159	264020.6	0.0000	13.0500	ppb	0.48	500.00	
235 U	# 3	159	161.1	0.0000	0.0062	ppb	6.23	30.00	
238 U	# 3	159	22464.5	0.0000	0.8510	ppb	1.49	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	711686.81	1.34	1796883.80	39.6	60 - 125	ISFail
45 Sc # 1	426582.56	0.35	814426.31	52.4	60 - 125	ISFail
45 Sc # 2	84980.52	0.94	168587.55	50.4	60 - 125	ISFail
45 Sc # 3	1072213.30	0.49	2150312.80	49.9	60 - 125	ISFail
72 Ge # 1	101071.83	0.81	207507.67	48.7	60 - 125	ISFail
72 Ge # 2	42995.83	1.09	87108.25	49.4	60 - 125	ISFail
72 Ge # 3	222525.16	0.29	458551.66	48.5	60 - 125	ISFail
115 In # 3	1776350.60	0.67	3329821.00	53.3	60 - 125	ISFail
159 Tb # 3	2883009.00	0.36	5173018.50	55.7	60 - 125	ISFail

CW 2/12/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Revised Report

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03082.D\F6B03082.D#
Date Acquired: Feb 3 2016 07:48 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-09J
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\B\IF6B03.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	63607.5	0.0000	3.4450	ppb	4.08	50.00	
9 Be	# 3	6	417.8	0.0000	0.2072	ppb	14.28	50.00	
11 B	# 3	6	4026.2	0.0000	1.9680	ppb	1.90	50.00	
23 Na	# 1	45	152113.0	0.0000	84.5400	ppb	0.84	50000.00	
24 Mg	# 3	45	5297260.0	0.0000	1038.0000	ppb	0.78	50000.00	
27 Al	# 3	45	23775910.0	0.0000	3554.0000	ppb	0.25	50000.00	
28 Si	# 1	45	145324.5	0.0000	383.2000	ppb	0.97	5000.00	
31 P	# 3	45	37562.8	0.0000	83.0400	ppb	1.96	500.00	
39 K	# 2	45	187858.8	0.0000	789.0000	ppb	0.73	50000.00	
40 Ca	# 1	45	50181672.0	0.0000	21150.0000	ppb	0.34	50000.00	
47 Ti	# 3	45	40033.1	0.0000	61.9300	ppb	0.44	500.00	
51 V	# 2	45	11381.1	0.0000	7.0890	ppb	1.77	500.00	
52 Cr	# 2	45	6449.4	0.0000	3.5310	ppb	0.60	500.00	
55 Mn	# 3	45	742152.1	0.0000	71.4900	ppb	0.34	3000.00	
56 Fe	# 1	45	11878390.0	0.0000	3428.0000	ppb	0.34	50000.00	
59 Co	# 3	45	12455.7	0.0000	1.5910	ppb	1.25	500.00	
60 Ni	# 2	45	1931.7	0.0000	3.2000	ppb	1.14	500.00	
63 Cu	# 2	45	3447.5	0.0000	2.2790	ppb	1.11	500.00	
66 Zn	# 3	72	11890.8	0.0000	9.2980	ppb	1.01	500.00	
75 As	# 2	72	279.3	0.0000	1.0020	ppb	5.81	500.00	
78 Se	# 1	72	8.2	0.0000	0.0490	ppb	44.44	500.00	
88 Sr	# 3	72	502203.7	0.0000	37.4500	ppb	0.76	500.00	
90 Zr	# 3	72	15424.4	0.0000	1.8000	ppb	0.89	50.00	
95 Mo	# 3	115	350.0	0.0000	0.1203	ppb	9.86	500.00	
107 Ag	# 3	115	104.4	0.0000	0.0107	ppb	9.91	50.00	
111 Cd	# 3	115	150.6	0.0000	0.0944	ppb	8.28	500.00	
118 Sn	# 3	115	3398.3	0.0000	0.7075	ppb	2.59	500.00	
121 Sb	# 3	115	585.6	0.0000	0.0526	ppb	7.90	500.00	
137 Ba	# 3	115	153585.8	0.0000	61.7300	ppb	0.44	1000.00	
182 W	# 3	159	253.3	0.0000	0.0089	ppb	25.06	50.00	
205 Tl	# 3	159	861.2	0.0000	0.0558	ppb	6.86	500.00	
208 Pb	# 3	159	54913.3	0.0000	2.7120	ppb	0.21	500.00	
235 U	# 3	159	53.3	0.0000	0.0020	ppb	48.98	30.00	
238 U	# 3	159	4605.4	0.0000	0.1742	ppb	2.93	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	707527.88	0.65	1796883.80	39.4	60 - 125	~~ISFail~~
45 Sc # 1	404493.75	0.54	814426.31	49.7	60 - 125	ISFail
45 Sc # 2	81522.05	0.57	168587.55	48.4	60 - 125	ISFail
45 Sc # 3	1006565.20	0.82	2150312.80	46.8	60 - 125	ISFail
72 Ge # 1	102621.59	0.67	207507.67	49.5	60 - 125	ISFail
72 Ge # 2	43032.51	1.57	87108.25	49.4	60 - 125	ISFail
72 Ge # 3	221543.88	0.89	458551.66	48.3	60 - 125	ISFail
115 In # 3	1776689.10	0.81	3329821.00	53.4	60 - 125	ISFail
159 Tb # 3	2871570.80	0.61	5173018.50	55.5	60 - 125	ISFail

CW 2/12/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

0 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Revised Report

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03083.D\F6B03083.D#
Date Acquired: Feb 3 2016 07:52 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-09D
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\B\IF6B03.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	146020.9	0.0000	16.0000	ppb	1.70	50.00	
9 Be	# 3	6	1996.9	0.0000	1.0410	ppb	3.26	50.00	
11 B	# 3	6	13874.6	0.0000	8.7200	ppb	3.45	50.00	
23 Na	# 1	45	605739.8	0.0000	451.9000	ppb	0.70	50000.00	
24 Mg	# 3	45	25218270.0	0.0000	4681.0000	ppb	0.40	50000.00	
27 Al	# 3	45	114894900.0	0.0000	16240.0000	ppb	0.29	50000.00	
28 Si	# 1	45	959448.3	0.0000	2419.0000	ppb	0.56	5000.00	
31 P	# 3	45	141280.5	0.0000	361.3000	ppb	0.47	500.00	
39 K	# 2	45	814988.9	0.0000	3540.0000	ppb	1.07	50000.00	
40 Ca	# 1	45	239093410.0	0.0000	96150.0000	ppb	0.66	50000.00	>LRS
47 Ti	# 3	45	213891.7	0.0000	313.5000	ppb	0.57	500.00	
51 V	# 2	45	52993.5	0.0000	33.6500	ppb	0.33	500.00	
52 Cr	# 2	45	31009.0	0.0000	16.6700	ppb	0.30	500.00	
55 Mn	# 3	45	3520681.0	0.0000	321.6000	ppb	0.31	3000.00	
56 Fe	# 1	45	57158328.0	0.0000	15740.0000	ppb	0.57	50000.00	
59 Co	# 3	45	61030.4	0.0000	7.5830	ppb	1.74	500.00	
60 Ni	# 2	45	9073.1	0.0000	15.0600	ppb	0.80	500.00	
63 Cu	# 2	45	16433.1	0.0000	10.8200	ppb	0.61	500.00	
66 Zn	# 3	72	51701.6	0.0000	42.0800	ppb	0.44	500.00	
75 As	# 2	72	1232.3	0.0000	4.8490	ppb	3.00	500.00	
78 Se	# 1	72	33.3	0.0000	0.2378	ppb	13.26	500.00	
88 Sr	# 3	72	2232553.0	0.0000	167.7000	ppb	0.30	500.00	
90 Zr	# 3	72	69602.3	0.0000	8.2690	ppb	0.05	50.00	
95 Mo	# 3	115	1540.1	0.0000	0.5633	ppb	4.37	500.00	
107 Ag	# 3	115	366.7	0.0000	0.0475	ppb	7.37	50.00	
111 Cd	# 3	115	857.0	0.0000	0.5446	ppb	10.97	500.00	
118 Sn	# 3	115	16399.0	0.0000	3.5070	ppb	2.25	500.00	
121 Sb	# 3	115	1672.4	0.0000	0.2423	ppb	5.70	500.00	
137 Ba	# 3	115	803166.0	0.0000	326.5000	ppb	0.47	1000.00	
182 W	# 3	159	953.4	0.0000	0.1072	ppb	2.46	50.00	
205 Tl	# 3	159	3840.7	0.0000	0.2603	ppb	0.88	500.00	
208 Pb	# 3	159	256428.3	0.0000	12.7500	ppb	0.35	500.00	
235 U	# 3	159	161.1	0.0000	0.0062	ppb	7.20	30.00	
238 U	# 3	159	21138.9	0.0000	0.8055	ppb	1.33	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	700701.81	0.56	1796883.80	39.0	60 - 125	ISFail
45 Sc # 1	424145.34	0.87	814426.31	52.1	60 - 125	ISFail
45 Sc # 2	84443.75	0.32	168587.55	50.1	60 - 125	ISFail
45 Sc # 3	1064215.10	0.37	2150312.80	49.5	60 - 125	ISFail
72 Ge # 1	101013.13	0.78	207507.67	48.7	60 - 125	ISFail
72 Ge # 2	42773.91	0.51	87108.25	49.1	60 - 125	ISFail
72 Ge # 3	219980.55	0.16	458551.66	48.0	60 - 125	ISFail
115 In # 3	1757933.10	0.52	3329821.00	52.8	60 - 125	ISFail
159 Tb # 3	2866030.30	0.45	5173018.50	55.4	60 - 125	ISFail

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Revised Report

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03084.D\F6B03084.D#
Date Acquired: Feb 3 2016 07:57 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-11
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	197303.3	0.0000	24.0900	ppb	0.72	50.00	
9 Be	# 3	6	3296.0	0.0000	1.7440	ppb	1.19	50.00	
11 B	# 3	6	12605.6	0.0000	7.9490	ppb	0.99	50.00	
23 Na	# 1	45	111370.8	0.0000	41.2800	ppb	1.17	50000.00	
24 Mg	# 3	45	23703340.0	0.0000	4369.0000	ppb	0.75	50000.00	
27 Al	# 3	45	210478400.0	0.0000	29550.0000	ppb	0.42	50000.00	
28 Si	# 1	45	905865.8	0.0000	2193.0000	ppb	2.41	5000.00	
31 P	# 3	45	95618.5	0.0000	234.4000	ppb	0.95	500.00	
39 K	# 2	45	1254420.0	0.0000	5293.0000	ppb	0.83	50000.00	
40 Ca	# 1	45	10782010.0	0.0000	4157.0000	ppb	0.24	50000.00	
47 Ti	# 3	45	344207.3	0.0000	500.9000	ppb	0.29	500.00	>LRS
51 V	# 2	45	88932.5	0.0000	54.8100	ppb	0.66	500.00	
52 Cr	# 2	45	54028.0	0.0000	28.0900	ppb	0.64	500.00	
55 Mn	# 3	45	5206452.0	0.0000	472.3000	ppb	0.27	3000.00	
56 Fe	# 1	45	105124400.0	0.0000	27790.0000	ppb	0.34	50000.00	
59 Co	# 3	45	92580.8	0.0000	11.4500	ppb	0.29	500.00	
60 Ni	# 2	45	15018.9	0.0000	24.1500	ppb	0.65	500.00	
63 Cu	# 2	45	27054.8	0.0000	17.2400	ppb	1.16	500.00	
66 Zn	# 3	72	84646.9	0.0000	68.7800	ppb	0.48	500.00	
75 As	# 2	72	2143.3	0.0000	8.2750	ppb	3.53	500.00	
78 Se	# 1	72	50.2	0.0000	0.3524	ppb	6.32	500.00	
88 Sr	# 3	72	601636.4	0.0000	44.9400	ppb	0.35	500.00	
90 Zr	# 3	72	81266.9	0.0000	9.6070	ppb	0.82	50.00	
95 Mo	# 3	115	2172.5	0.0000	0.8081	ppb	5.32	500.00	
107 Ag	# 3	115	665.6	0.0000	0.0905	ppb	4.19	50.00	
111 Cd	# 3	115	811.9	0.0000	0.5226	ppb	6.10	500.00	
118 Sn	# 3	115	18203.5	0.0000	3.9440	ppb	2.36	500.00	
121 Sb	# 3	115	2069.1	0.0000	0.3157	ppb	6.34	500.00	
137 Ba	# 3	115	480828.4	0.0000	197.9000	ppb	0.15	1000.00	
182 W	# 3	159	997.9	0.0000	0.1137	ppb	2.84	50.00	
205 Tl	# 3	159	6063.8	0.0000	0.4135	ppb	0.30	500.00	
208 Pb	# 3	159	423568.3	0.0000	21.1000	ppb	0.32	500.00	
235 U	# 3	159	170.0	0.0000	0.0066	ppb	12.36	30.00	
238 U	# 3	159	25729.5	0.0000	0.9822	ppb	2.25	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	692942.00	0.44	1796883.80	38.6	60 - 125	~~ISFail~~
45 Sc # 1	441711.19	0.27	814426.31	54.2	60 - 125	ISFail
45 Sc # 2	87515.02	0.63	168587.55	51.9	60 - 125	ISFail
45 Sc # 3	1071789.30	0.67	2150312.80	49.8	60 - 125	ISFail
72 Ge # 1	104309.84	0.75	207507.67	50.3	60 - 125	ISFail
72 Ge # 2	44018.87	0.65	87108.25	50.5	60 - 125	ISFail
72 Ge # 3	221177.94	0.22	458551.66	48.2	60 - 125	ISFail
115 In # 3	1735542.60	0.29	3329821.00	52.1	60 - 125	ISFail
159 Tb # 3	2861579.50	0.31	5173018.50	55.3	60 - 125	ISFail

CMC 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03085.D\F6B03085.D#
Date Acquired: Feb 3 2016 08:01 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-12
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	107959.0	0.0000	11.2600	ppb	1.38	50.00	
9 Be	# 3	6	1333.4	0.0000	0.7348	ppb	5.61	50.00	
11 B	# 3	6	9803.5	0.0000	6.3550	ppb	2.04	50.00	
23 Na	# 1	45	147992.9	0.0000	84.1700	ppb	0.18	50000.00	
24 Mg	# 3	45	27026020.0	0.0000	5496.0000	ppb	0.32	50000.00	
27 Al	# 3	45	75594640.0	0.0000	11710.0000	ppb	0.41	50000.00	
28 Si	# 1	45	953837.2	0.0000	2585.0000	ppb	0.48	5000.00	
31 P	# 3	45	79568.5	0.0000	213.0000	ppb	0.73	500.00	
39 K	# 2	45	529357.3	0.0000	2453.0000	ppb	1.64	50000.00	
40 Ca	# 1	45	756421820.0	0.0000	326900.0000	ppb	0.33	50000.00	>LRS
47 Ti	# 3	45	112414.5	0.0000	180.4000	ppb	0.67	500.00	
51 V	# 2	45	44413.6	0.0000	30.3100	ppb	0.81	500.00	
52 Cr	# 2	45	18743.3	0.0000	10.8200	ppb	2.07	500.00	
55 Mn	# 3	45	1213554.0	0.0000	121.3000	ppb	1.37	3000.00	
56 Fe	# 1	45	33811800.0	0.0000	10000.0000	ppb	0.53	50000.00	
59 Co	# 3	45	50732.2	0.0000	6.8990	ppb	1.28	500.00	
60 Ni	# 2	45	7624.7	0.0000	13.6100	ppb	1.55	500.00	
63 Cu	# 2	45	7483.7	0.0000	5.2570	ppb	2.04	500.00	
66 Zn	# 3	72	27947.6	0.0000	25.1400	ppb	1.09	500.00	
75 As	# 2	72	1679.4	0.0000	7.2590	ppb	2.05	500.00	
78 Se	# 1	72	24.2	0.0000	0.1829	ppb	13.13	500.00	
88 Sr	# 3	72	3820689.0	0.0000	319.4000	ppb	0.20	500.00	
90 Zr	# 3	72	41992.5	0.0000	5.5420	ppb	1.42	50.00	
95 Mo	# 3	115	1010.1	0.0000	0.4064	ppb	6.85	500.00	
107 Ag	# 3	115	195.6	0.0000	0.0265	ppb	5.30	50.00	
111 Cd	# 3	115	669.6	0.0000	0.4705	ppb	2.37	500.00	
118 Sn	# 3	115	13148.8	0.0000	3.1070	ppb	1.82	500.00	
121 Sb	# 3	115	1627.9	0.0000	0.2644	ppb	3.60	500.00	
137 Ba	# 3	115	778452.6	0.0000	349.9000	ppb	1.40	1000.00	
182 W	# 3	159	1051.2	0.0000	0.1344	ppb	2.78	50.00	
205 Tl	# 3	159	2427.0	0.0000	0.1785	ppb	1.27	500.00	
208 Pb	# 3	159	153538.6	0.0000	8.3220	ppb	0.87	500.00	
235 U	# 3	159	180.0	0.0000	0.0076	ppb	4.18	30.00	
238 U	# 3	159	23475.1	0.0000	0.9761	ppb	1.19	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	659795.75	0.85	1796883.80	36.7	60 - 125	ISFail
45 Sc # 1	394652.06	0.37	814426.31	48.5	60 - 125	ISFail
45 Sc # 2	78447.44	1.19	168587.55	46.5	60 - 125	ISFail
45 Sc # 3	971569.88	0.71	2150312.80	45.2	60 - 125	ISFail
72 Ge # 1	94141.28	0.70	207507.67	45.4	60 - 125	ISFail
72 Ge # 2	39251.80	1.06	87108.25	45.1	60 - 125	ISFail
72 Ge # 3	197760.64	0.48	458551.66	43.1	60 - 125	ISFail
115 In # 3	1589992.80	1.53	3329821.00	47.8	60 - 125	ISFail
159 Tb # 3	2626891.00	0.50	5173018.50	50.8	60 - 125	ISFail

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03086.D\F6B03086.D#
Date Acquired: Feb 3 2016 08:05 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B012-13
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	160322.0	0.0000	19.8600	ppb	0.55	50.00	
9 Be	# 3	6	1683.5	0.0000	0.9379	ppb	6.01	50.00	
11 B	# 3	6	16897.8	0.0000	11.5900	ppb	1.68	50.00	
23 Na	# 1	45	478385.9	0.0000	380.4000	ppb	0.82	50000.00	
24 Mg	# 3	45	31817160.0	0.0000	6385.0000	ppb	0.60	50000.00	
27 Al	# 3	45	113653700.0	0.0000	17370.0000	ppb	0.81	50000.00	
28 Si	# 1	45	1043458.0	0.0000	2854.0000	ppb	0.72	5000.00	
31 P	# 3	45	70281.2	0.0000	182.3000	ppb	0.53	500.00	
39 K	# 2	45	846859.8	0.0000	3956.0000	ppb	1.71	50000.00	
40 Ca	# 1	45	310013310.0	0.0000	135200.0000	ppb	0.37	50000.00	>LRS
47 Ti	# 3	45	184870.7	0.0000	292.8000	ppb	0.59	500.00	
51 V	# 2	45	69646.0	0.0000	47.6700	ppb	0.22	500.00	
52 Cr	# 2	45	28056.5	0.0000	16.1900	ppb	0.71	500.00	
55 Mn	# 3	45	2285226.0	0.0000	225.5000	ppb	0.38	3000.00	
56 Fe	# 1	45	52014512.0	0.0000	15530.0000	ppb	0.52	50000.00	
59 Co	# 3	45	55429.4	0.0000	7.4420	ppb	0.99	500.00	
60 Ni	# 2	45	8599.5	0.0000	15.3200	ppb	0.13	500.00	
63 Cu	# 2	45	10293.7	0.0000	7.2420	ppb	1.48	500.00	
66 Zn	# 3	72	43463.7	0.0000	38.0000	ppb	0.41	500.00	
75 As	# 2	72	1395.6	0.0000	5.9840	ppb	1.46	500.00	
78 Se	# 1	72	20.7	0.0000	0.1571	ppb	5.45	500.00	
88 Sr	# 3	72	2546405.0	0.0000	205.7000	ppb	1.15	500.00	
90 Zr	# 3	72	82845.2	0.0000	10.5900	ppb	0.77	50.00	
95 Mo	# 3	115	1151.2	0.0000	0.4533	ppb	3.21	500.00	
107 Ag	# 3	115	222.2	0.0000	0.0298	ppb	15.23	50.00	
111 Cd	# 3	115	681.3	0.0000	0.4676	ppb	4.18	500.00	
118 Sn	# 3	115	14835.0	0.0000	3.4260	ppb	1.05	500.00	
121 Sb	# 3	115	1760.2	0.0000	0.2821	ppb	4.13	500.00	
137 Ba	# 3	115	540039.3	0.0000	237.1000	ppb	0.52	1000.00	
182 W	# 3	159	1011.2	0.0000	0.1265	ppb	6.60	50.00	
205 Tl	# 3	159	3330.5	0.0000	0.2432	ppb	1.82	500.00	
208 Pb	# 3	159	218662.2	0.0000	11.7200	ppb	0.81	500.00	
235 U	# 3	159	156.7	0.0000	0.0065	ppb	7.46	30.00	
238 U	# 3	159	16725.7	0.0000	0.6870	ppb	1.86	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	654758.50	0.12	1796883.80	36.4	60 - 125	ISFail
45 Sc # 1	391017.78	0.64	814426.31	48.0	60 - 125	ISFail
45 Sc # 2	78686.70	0.20	168587.55	46.7	60 - 125	ISFail
45 Sc # 3	984651.56	0.88	2150312.80	45.8	60 - 125	ISFail
72 Ge # 1	92647.16	0.75	207507.67	44.6	60 - 125	ISFail
72 Ge # 2	39431.26	0.87	87108.25	45.3	60 - 125	ISFail
72 Ge # 3	204610.72	0.43	458551.66	44.6	60 - 125	ISFail
115 In # 3	1627184.30	0.56	3329821.00	48.9	60 - 125	ISFail
159 Tb # 3	2657910.50	0.54	5173018.50	51.4	60 - 125	ISFail

CCC 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures
9 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

121A

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03088.D\F6B03088.D#
Date Acquired: Feb 3 2016 08:14 pm
Operator: CCapul
Sample Name: CCV8
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 03 2016 01:48 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.14 ppb	0.49	25.00	90 - 110	
9 Be	27.41 ppb	1.17	25.00	90 - 110	
11 B	25.61 ppb	1.24	25.00	90 - 110	
23 Na	23580.00 ppb	0.77	25000.00	90 - 110	
24 Mg	23130.00 ppb	0.89	25000.00	90 - 110	
27 Al	23690.00 ppb	0.71	25000.00	90 - 110	
28 Si	2505.00 ppb	0.52	2500.00	90 - 110	
31 P	267.80 ppb	0.76	250.00	90 - 110	
39 K	26020.00 ppb	0.55	25000.00	90 - 110	
40 Ca	24690.00 ppb	0.46	25000.00	90 - 110	
47 Ti	253.50 ppb	1.22	250.00	90 - 110	
51 V	249.00 ppb	0.54	250.00	90 - 110	
52 Cr	243.60 ppb	0.79	250.00	90 - 110	
55 Mn	1471.00 ppb	1.20	1500.00	90 - 110	
56 Fe	24070.00 ppb	0.29	25000.00	90 - 110	
59 Co	256.50 ppb	1.29	250.00	90 - 110	
60 Ni	249.80 ppb	0.56	250.00	90 - 110	
63 Cu	249.30 ppb	0.54	250.00	90 - 110	
66 Zn	243.40 ppb	0.38	250.00	90 - 110	
75 As	254.20 ppb	1.37	250.00	90 - 110	
78 Se	252.70 ppb	1.00	250.00	90 - 110	
88 Sr	267.80 ppb	0.34	250.00	90 - 110	
90 Zr	29.42 ppb	1.71	25.00	90 - 110	Fail
95 Mo	240.50 ppb	0.31	250.00	90 - 110	
107 Ag	24.44 ppb	0.83	25.00	90 - 110	
111 Cd	246.90 ppb	0.68	250.00	90 - 110	
118 Sn	244.10 ppb	0.57	250.00	90 - 110	
121 Sb	249.30 ppb	0.99	250.00	90 - 110	
137 Ba	510.50 ppb	1.02	500.00	90 - 110	
182 W	25.08 ppb	0.70	25.00	90 - 110	
205 Tl	252.70 ppb	1.07	250.00	90 - 110	
208 Pb	253.00 ppb	0.40	250.00	90 - 110	
235 U	1.58 ppb	1.72	1.80	90 - 110	Fail
238 U	249.10 ppb	0.79	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	640937.00	0.47	1796883.80	35.7	60 - 125	ISFail
45 Sc	361978.94	0.39	814426.31	44.4	60 - 125	ISFail
45 Sc	71849.73	0.61	168587.55	42.6	60 - 125	ISFail
45 Sc	901874.13	1.04	2150312.80	41.9	60 - 125	ISFail
72 Ge	89153.74	0.69	207507.67	43.0	60 - 125	ISFail
72 Ge	37058.32	1.51	87108.25	42.5	60 - 125	ISFail
72 Ge	193451.89	0.46	458551.66	42.2	60 - 125	ISFail
115 In	1508785.80	0.32	3329821.00	45.3	60 - 125	ISFail
159 Tb	2521513.30	0.26	5173018.50	48.7	60 - 125	ISFail

CW 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\DATA\IF62016\B\IF6B03.B\F6B03089.D\F6B03089.D#
Date Acquired: Feb 3 2016 08:18 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB8
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 03 2016 01:48 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1199	ppb	37322.3	126.36	0.20	
9 Be	0.0026	ppb	23.3	187.69	0.10	
11 B	0.0011	ppb	1007.9	2023.60	5.00	
23 Na	-18.1500	ppb	28658.3	2.48	40.00	
24 Mg	0.4913	ppb	10914.4	35.88	10.00	
27 Al	1.0240	ppb	7823.4	19.87	20.00	
28 Si	1.9230	ppb	1020.1	1.25	20.00	
31 P	7.4830	ppb	9703.6	10.31	10.00	
39 K	22.0700	ppb	17922.7	5.71	20.00	Fail
40 Ca	2.3240	ppb	18701.3	3.89	25.00	
47 Ti	-0.0641	ppb	32.2	33.79	0.50	
51 V	0.1082	ppb	797.1	10.24	0.50	
52 Cr	0.0091	ppb	134.4	81.52	0.20	
55 Mn	0.0236	ppb	2282.5	39.58	0.20	
56 Fe	6.6990	ppb	24918.7	7.59	10.00	
59 Co	-0.0157	ppb	272.2	12.37	0.20	
60 Ni	0.0107	ppb	82.7	151.73	0.20	
63 Cu	-0.0432	ppb	61.3	16.84	0.40	
66 Zn	-0.0863	ppb	335.6	29.28	2.00	
75 As	0.0457	ppb	35.3	60.48	0.20	
78 Se	0.0686	ppb	9.6	32.33	0.20	
88 Sr	-0.0018	ppb	306.7	179.97	0.20	
90 Zr	0.0055	ppb	217.8	61.51	2.00	
95 Mo	0.1575	ppb	392.2	28.96	0.40	
107 Ag	0.0003	ppb	25.6	766.18	0.20	
111 Cd	0.0214	ppb	30.0	7.07	0.20	
118 Sn	0.0923	ppb	436.7	12.86	0.20	
121 Sb	0.0518	ppb	505.6	12.09	0.40	
137 Ba	-0.0019	ppb	91.1	500.10	0.20	
182 W	0.0062	ppb	202.2	61.21	1.00	
205 Tl	0.0304	ppb	423.4	26.29	0.20	
208 Pb	0.0136	ppb	514.5	11.12	0.10	
235 U	0.0002	ppb	7.8	109.25	1.00	
238 U	0.0307	ppb	721.2	8.20	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	638116.9	1.66	1796883.80	35.5	60 - 125	ISFail
45 Sc	349880.0	0.30	814426.31	43.0	60 - 125	ISFail
45 Sc	70014.4	0.81	168587.55	41.5	60 - 125	ISFail
45 Sc	850475.0	0.58	2150312.80	39.6	60 - 125	ISFail
72 Ge	90138.8	0.44	207507.67	43.4	60 - 125	ISFail
72 Ge	37276.6	0.18	87108.25	42.8	60 - 125	ISFail
72 Ge	189984.1	0.64	458551.66	41.4	60 - 125	ISFail
115 In	1546787.0	1.14	3329821.00	46.5	60 - 125	ISFail
159 Tb	2477791.0	0.84	5173018.50	47.9	60 - 125	ISFail

CV 2/4/16

ISTD Ref File : C:\DATA\IF62016\B\IF6B03.B\F6B03004.D\F6B03004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 02515001

Book #: EIM-057
Batch: IMB0055
Matrix: Soil
Digestor ID: D

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	92.2 °C		92.8 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 02 - 29	4
LCS-2	↓ - 02 - 30	4
MS	Same spike soln & volog	LCS 1&2
Blank Soil (Bead)	SM5A - 03 - 02 - 04	2g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 005 - 14 - 09	10
HCl	↓ - 12 - 08	5+5
H_2O_2	↓ - 12 - 23	10
HNO_3(1:1)	SM5B - 03 - 68 - 03	10
pH Strip (0-14)	NA	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 03
☑ Thermometer ID:	150590648 / D24
☑ Pipette ID:	142780357
☑ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP
Standard Added By: SP Witnessed By: NT
Extract Rcvd By: [signature] Checked By: [signature]

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IMB005S01	IMB005SB	2.04	g	2/3/16 14:02	100	2	100	1	
16IMB005S02	IMB005SL	2.03	g	2/3/16 14:03	100	2	100	1	
16IMB005S03	B012-01	2.05	g	2/3/16 14:03	100	2	100	0.976	
16IMB005S04	B012-02	2.03	g	2/3/16 14:04	100	2	100	0.985	
16IMB005S05	B012-03	2.03	g	2/3/16 14:05	100	2	100	0.985	
16IMB005S06	B012-04	2.06	g	2/3/16 14:06	100	2	100	0.971	
16IMB005S07	B012-05	2.02	g	2/3/16 14:07	100	2	100	0.99	
16IMB005S08	B012-06	2.05	g	2/3/16 14:07	100	2	100	0.976	
16IMB005S09	B012-07	2.06	g	2/3/16 14:08	100	2	100	0.971	
16IMB005S10	B012-08	2.05	g	2/3/16 14:09	100	2	100	0.976	
16IMB005S11	B012-09	2.04	g	2/3/16 14:10	100	2	100	0.98	Not Evaluated per Client request
16IMB005S12	B012-10	2.04	g	2/3/16 14:11	100	2	100	0.98	Renamed B012-09 per Client request
16IMB005S13	B012-10M	2.02	g	2/3/16 14:11	100	2	100	0.99	Renamed B012-09M per Client request
16IMB005S14	B012-10D	2.01	g	2/3/16 14:12	100	2	100	0.995	Renamed B012-09D per Client request
16IMB005S15	B012-11	2.02	g	2/3/16 14:12	100	2	100	0.99	
16IMB005S16	B012-12	2.04	g	2/3/16 14:13	100	2	100	0.98	
16IMB005S17	B012-13	2.05	g	2/3/16 14:14	100	2	100	0.976	

CW 2/11/16

Balance ID: 10203192. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 2/3/16 14:33

Prepared By: SPara

☑ Digestion Ended @ 2/3/16 16:49

Checked By: CW

Comments:Samples B012-10, -10M & -10D renamed in the Analytical Run as B012-09,-09M & 09D respectively.

Date 2/11/16

SOP EMAX-6020 Rev. 9

Revised Report

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E003**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E003**

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-04-2016
EMAX Batch No.: 16E003

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Laboratory Report
Project: CANNON AFB PBR

Enclosed is the Laboratory report for samples received on 05/03/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CABAC-SB09-000.5	E003-01	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB09-200.5	E003-02	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB09-005	E003-03	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB09-010	E003-04	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB05-000.5	E003-05	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB05-005	E003-06	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB05-205	E003-07	05/02/16	SOIL	2 METALS BY ICP-MS
CABAC-SB05-010	E003-08	05/02/16	SOIL	2 METALS BY ICP-MS

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16E003

METHOD SW6020A
TOTAL METALS BY ICP-MS

A total of eight (8) soil samples were received on 05/03/16 to be analyzed for Total Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME003SB - 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) LCS was analyzed. All Analytes in IME003SL - all analytes were within LCS QC limits. 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) MS was analyzed. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC 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.

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16E003
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7829 7065 6179	Recipient Charleen I. Quintanilla
☐ EMAX Courier ☐ Client Delivery		Date 5/3/16 Time 0910

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 5/3 ☑ From Superfund Site ☐ Rad screening required

Note:

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ ______
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 1.0 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	A - S/N ______	B - S/N 140252070	C - S/N 140252067	(D) - S/N 150555630	FM 2/8/16

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
3	3	D10	No date on Correction / Label	R1

CS 5/3/16

☐ 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:

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ______	D13	Out of Holding Time	R1	Proceed as indicated in ☑ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ______	D16	Preservation not indicated in ______	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ______	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	______
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	______
(D10)	No initial/date on corrections in COC label	D22	______	R10	______
D11	Container count mismatch COC vs received	D23	______	R11	______
D12	Container size mismatch COC vs received	D24	______	R12	______

REVIEWS:

Sample Labeling [signature] Date 5/3/16 SRF [signature] Date 5/3/16 PM [signature] Date 5/3/16

ORIGIN ID:CVNA (402) 321-0977
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 02MAY16
ACTWGT: 42.40 LB
CAD: 006993959/SSFE1703
DIMS: 24x13x12 IN

BILL THIRD PARTY

Part # 156287-435 RIT2 1

TO SAMPLE CUSTODIAN
EMAX LABORATORIES
1835 WEST 205TH STREET

TORRANCE CA 90501
(310) 618-0818 REF:
INV:
PO: DEPT:

FedEx
Express

REL#
3785346

TUE - 03 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7829 7065 6179

A7 HHRA

90501
CA-US LAX

16E003

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: CAFB, Clovis, NM
Project Manager: Mike Sonderman
Sampler(s): K. Kloewer, J. Carritt

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	Analytical Parameters: Arsenic + Thallium 6020A	Preservative / Remarks
1	05/02/16	13:05		X	CABAC-SB09-000.5	Soil	1	4 oz glass jar	X	JC NA 4°C
2	05/02/16	13:15		X	CABAC-SB09-200.5	Soil	1	4 oz glass jar	X	4°C
3	05/02/16	1325		X	CABAC-SB09-005	Soil	1	4 oz glass jar	X	4°C
4	5/2/16	1341		X	CABAC-SB09-010	Soil	X	4 oz glass jar	X	4°C
5	5/2/16	1515		X	CABAC-SB05-000.5	Soil	1	4 oz glass jar	X	4°C
6	5/2/16	1524		X	CABAC-SB05-005	Soil	1	4 oz glass jar	X	4°C
7	5/2/16	1526		X	CABAC-SB05-205	Soil	1	" "	X	4°C
8	5/2/16	1536		X	CABAC-SB05-010	Soil	1	" "	X	4°C

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: Jeffrey Carritt	05/2/16	17:00	Method of Shipment: FEDEX	24 Hour TAT
Received by:			Airbill No.:	
Relinquished by:			Lab Address: Emax Laboratories, 1835 West 205 St., Torrance, CA 90501	
Received for Laboratory by: Charlene L. Ortiz	5/3/16	0910		

P Drive/Office Administration/Chain of Custody Form (Nov 2012) White copy - Laboratory Yellow copy - Laboratory Pink copy - URS

Temp: 1.0°C

130419

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 or estimated value.
*	*	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.

LAB CHRONICLE
TOTAL METALS BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16E003
Instrument ID : T-IF6

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IME003SB	1	NA	05/03/1617:29	05/03/1614:22	F6E03019	F6E03017	IME003S	Method Blank
LCS1S	IME003SL	1	NA	05/03/1617:33	05/03/1614:22	F6E03020	F6E03017	IME003S	Lab Control Sample (LCS)
CABAC-SB09-000.5MS	E003-01M	0.976	8.0	05/03/1617:38	05/03/1614:22	F6E03021	F6E03017	IME003S	Matrix Spike Sample (MS)
CABAC-SB09-000.5AS	E003-01A	0.985	8.0	05/03/1617:42	05/03/1614:22	F6E03022	F6E03017	IME003S	Analytical Spike Sample
CABAC-SB09-000.5	E003-01	0.985	8.0	05/03/1617:46	05/03/1614:22	F6E03023	F6E03017	IME003S	Field Sample
CABAC-SB09-000.5DL	E003-01J	4.93	8.0	05/03/1617:50	05/03/1614:22	F6E03024	F6E03017	IME003S	Diluted Sample
CABAC-SB09-000.5DUP	E003-01D	0.976	8.0	05/03/1617:55	05/03/1614:22	F6E03025	F6E03017	IME003S	Duplicate Sample
CABAC-SB09-200.5	E003-02	0.976	6.6	05/03/1617:59	05/03/1614:22	F6E03026	F6E03017	IME003S	Field Sample
CABAC-SB09-005	E003-03	0.971	6.1	05/03/1618:03	05/03/1614:22	F6E03027	F6E03017	IME003S	Field Sample
CABAC-SB09-010	E003-04	0.971	4.9	05/03/1618:21	05/03/1614:22	F6E03031	F6E03029	IME003S	Field Sample
CABAC-SB05-000.5	E003-05	0.957	4.6	05/03/1618:25	05/03/1614:22	F6E03032	F6E03029	IME003S	Field Sample
CABAC-SB05-005	E003-06	0.957	6.1	05/03/1618:30	05/03/1614:22	F6E03033	F6E03029	IME003S	Field Sample
CABAC-SB05-205	E003-07	0.962	6.8	05/03/1618:34	05/03/1614:22	F6E03034	F6E03029	IME003S	Field Sample
CABAC-SB05-010	E003-08	0.990	4.7	05/03/1618:38	05/03/1614:22	F6E03035	F6E03029	IME003S	Field Sample

FN - Filename
% Moist - Percent Moisture

RESULTS SUMMARIES

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-000.5	Date Analyzed:	05/03/16 17:46
Lab Samp ID:	E003-01	Dilution Factor:	0.985
Lab File ID:	F6E03023	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	8.0
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.67	0.535	0.0535	0.107
Thallium	0.173J	0.535	0.0535	0.107

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-200.5	Date Analyzed:	05/03/16 17:59
Lab Samp ID:	E003-02	Dilution Factor:	0.976
Lab File ID:	F6E03026	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.6
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	5.36	0.522	0.0522	0.104
Thallium	0.237J	0.522	0.0522	0.104

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-005	Date Analyzed:	05/03/16 18:03
Lab Samp ID:	E003-03	Dilution Factor:	0.971
Lab File ID:	F6E03027	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.1
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.85	0.517	0.0517	0.103
Thallium	0.139J	0.517	0.0517	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-010	Date Analyzed:	05/03/16 18:21
Lab Samp ID:	E003-04	Dilution Factor:	0.971
Lab File ID:	F6E03031	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	4.9
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.25	0.511	0.0511	0.102
Thallium	ND	0.511	0.0511	0.102

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-000.5	Date Analyzed:	05/03/16 18:25
Lab Samp ID:	E003-05	Dilution Factor:	0.957
Lab File ID:	F6E03032	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	4.6
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.76	0.502	0.0502	0.100
Thallium	0.162J	0.502	0.0502	0.100

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-005	Date Analyzed:	05/03/16 18:30
Lab Samp ID:	E003-06	Dilution Factor:	0.957
Lab File ID:	F6E03033	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.1
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.48	0.510	0.0510	0.102
Thallium	0.119J	0.510	0.0510	0.102

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-205	Date Analyzed:	05/03/16 18:34
Lab Samp ID:	E003-07	Dilution Factor:	0.962
Lab File ID:	F6E03034	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.8
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.83	0.516	0.0516	0.103
Thallium	0.134J	0.516	0.0516	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-010	Date Analyzed:	05/03/16 18:38
Lab Samp ID:	E003-08	Dilution Factor:	0.990
Lab File ID:	F6E03035	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	4.7
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.37	0.519	0.0519	0.104
Thallium	0.116J	0.519	0.0519	0.104

QC SUMMARIES

METHOD BLANK

Method: 6020A

QC Measure: IME003SB

Associated Samples:

CABAC-SB09-000.5
CABAC-SB09-200.5
CABAC-SB09-005
CABAC-SB09-010
CABAC-SB05-000.5
CABAC-SB05-005
CABAC-SB05-205
CABAC-SB05-010

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	MBLK1S	Date Analyzed:	05/03/16 17:29
Lab Samp ID:	IME003SB	Dilution Factor:	1
Lab File ID:	F6E03019	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	NA
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

LCS/LCSD

Method: 6020A

QC Measure: IME003SL

Associated Samples:

CABAC-SB09-000.5
CABAC-SB09-200.5
CABAC-SB09-005
CABAC-SB09-010
CABAC-SB05-000.5
CABAC-SB05-005
CABAC-SB05-205
CABAC-SB05-010

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME003SB	IME003SL		
LAB FILE ID:	F6E03019	F6E03020		
DATIME EXTRCTD:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	NA
DATIME ANALYZD:	05/03/1617:29	05/03/1617:33	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.8	99	80-120
Thallium	ND	20.0	20.7	103	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILTN FACTR:	0.985	0.976		
SAMPLE ID:	CABAC-SB09;000.5			
CONTROL NO.:	E003-01	E003-01M		
LAB FILE ID:	F6E03023	F6E03021		
DATIME EXTRCTD:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATIME ANALYZD:	05/03/1617:46	05/03/1617:38	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	3.67	21.2	24.4	98	80-120
Thallium	0.173J	21.2	21.8	102	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILUTION FACTOR:	0.985	4.93		
SAMPLE ID:	CABAC-SB09-000	CABAC-SB09-000		
EMAX SAMP ID:	E003-01	E003-01J		
LAB FILE ID:	F6E03023	F6E03024		
DATE EXTRACTED:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATE ANALYZED:	05/03/1617:46	05/03/1617:50	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	3.67	3.8	4	10
Thallium	.173J	ND	NA	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILTN FACTR:	0.985	0.985		
SAMPLE ID:	CABAC-SB09-000.5			
CONTROL NO.:	E003-01	E003-01A		
LAB FILE ID:	F6E03023	F6E03022		
DATIME EXTRCTD:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATIME ANALYZD:	05/03/1617:46	05/03/1617:42	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	3.67	21.4	25.1	100	75-125
Thallium	0.173J	21.4	22.3	104	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILUTION FACTOR:	0.985	0.976		
SAMPLE ID:	CABAC-SB09-000	CABAC-SB09-000		
EMAX SAMP ID:	E003-01	E003-01D		
LAB FILE ID:	F6E03023	F6E03025		
DATE EXTRACTED:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATE ANALYZED:	05/03/1617:46	05/03/1617:55	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	3.67	4.25	15	20
Thallium	.173J	.202J	NA	20

RAW DATA

METALS

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-000.5	Date Analyzed:	05/03/16 17:46
Lab Samp ID:	E003-01	Dilution Factor:	0.985
Lab File ID:	F6E03023	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	8.0
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.67	0.535	0.0535	0.107
Thallium	0.173J	0.535	0.0535	0.107

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-200.5	Date Analyzed:	05/03/16 17:59
Lab Samp ID:	E003-02	Dilution Factor:	0.976
Lab File ID:	F6E03026	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.6
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	5.36	0.522	0.0522	0.104
Thallium	0.237J	0.522	0.0522	0.104

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-005	Date Analyzed:	05/03/16 18:03
Lab Samp ID:	E003-03	Dilution Factor:	0.971
Lab File ID:	F6E03027	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.1
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.85	0.517	0.0517	0.103
Thallium	0.139J	0.517	0.0517	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB09-010	Date Analyzed:	05/03/16 18:21
Lab Samp ID:	E003-04	Dilution Factor:	0.971
Lab File ID:	F6E03031	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	4.9
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.25	0.511	0.0511	0.102
Thallium	ND	0.511	0.0511	0.102

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-000.5	Date Analyzed:	05/03/16 18:25
Lab Samp ID:	E003-05	Dilution Factor:	0.957
Lab File ID:	F6E03032	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	4.6
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.76	0.502	0.0502	0.100
Thallium	0.162J	0.502	0.0502	0.100

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-005	Date Analyzed:	05/03/16 18:30
Lab Samp ID:	E003-06	Dilution Factor:	0.957
Lab File ID:	F6E03033	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.1
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.48	0.510	0.0510	0.102
Thallium	0.119J	0.510	0.0510	0.102

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-205	Date Analyzed:	05/03/16 18:34
Lab Samp ID:	E003-07	Dilution Factor:	0.962
Lab File ID:	F6E03034	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	6.8
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.83	0.516	0.0516	0.103
Thallium	0.134J	0.516	0.0516	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/02/16
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	CABAC-SB05-010	Date Analyzed:	05/03/16 18:38
Lab Samp ID:	E003-08	Dilution Factor:	0.990
Lab File ID:	F6E03035	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	4.7
Calib. Ref.:	F6E03029	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.37	0.519	0.0519	0.104
Thallium	0.116J	0.519	0.0519	0.104

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/03/16
SDG NO.	: 16E003	Date Extracted:	05/03/16 14:22
Sample ID:	MBLK1S	Date Analyzed:	05/03/16 17:29
Lab Samp ID:	IME003SB	Dilution Factor:	1
Lab File ID:	F6E03019	Matrix :	SOIL
Ext Btch ID:	IME003S	% Moisture :	NA
Calib. Ref.:	F6E03017	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME003SB	IME003SL		
LAB FILE ID:	F6E03019	F6E03020		
DATIME EXTRCTD:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	NA
DATIME ANALYZD:	05/03/1617:29	05/03/1617:33	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.8	99	80-120
Thallium	ND	20.0	20.7	103	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILTN FACTR:	0.985	0.976		
SAMPLE ID:	CABAC-SB09;000.5			
CONTROL NO.:	E003-01	E003-01M		
LAB FILE ID:	F6E03023	F6E03021		
DATIME EXTRCTD:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATIME ANALYZD:	05/03/1617:46	05/03/1617:38	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	3.67	21.2	24.4	98	80-120
Thallium	0.173J	21.2	21.8	102	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILUTION FACTOR:	0.985	4.93		
SAMPLE ID:	CABAC-SB09-000	CABAC-SB09-000		
EMAX SAMP ID:	E003-01	E003-01J		
LAB FILE ID:	F6E03023	F6E03024		
DATE EXTRACTED:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATE ANALYZED:	05/03/1617:46	05/03/1617:50	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	3.67	3.8	4	10
Thallium	.173J	ND	NA	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILTN FACTR:	0.985	0.985		
SAMPLE ID:	CABAC-SB09-000.5			
CONTROL NO.:	E003-01	E003-01A		
LAB FILE ID:	F6E03023	F6E03022		
DATIME EXTRCTD:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATIME ANALYZD:	05/03/1617:46	05/03/1617:42	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	3.67	21.4	25.1	100	75-125
Thallium	0.173J	21.4	22.3	104	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E003
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	8.0
DILUTION FACTOR:	0.985	0.976		
SAMPLE ID:	CABAC-SB09-000	CABAC-SB09-000		
EMAX SAMP ID:	E003-01	E003-01D		
LAB FILE ID:	F6E03023	F6E03025		
DATE EXTRACTED:	05/03/1614:22	05/03/1614:22	DATE COLLECTED:	05/02/16
DATE ANALYZED:	05/03/1617:46	05/03/1617:55	DATE RECEIVED:	05/03/16
PREP. BATCH:	IME003S	IME003S		
CALIB. REF:	F6E03017	F6E03017		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	3.67	4.25	15	20
Thallium	.173J	.202J	NA	20

ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 5/3/16 14:21

End Date: 5/3/16 18:57

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Book #:	AF6-015
Instrument No.:	F6
Analytical Batch:	IFE13
Analytical Sequence:	FE13
Method File:	EMX600H
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☑ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B059.72.05	MRL1 (1)	SM6B059.76.06
S1	.7601	MRL2 (0.5)	.76.07
S2	.73.02	MRL3 (LM)	.76.08
S3	.73.03	MRL4	NA
S4	.73.04	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B059.68.07
S7		Post-Spike 1	SM6A.057.03.05
ICV	SM6B057.71.03	Post-Spike 2	03.06
CCV	.74.01	Post-Spike 3	NA
ICSA	.76.04	Post-Spike 4	
ICSAB	.76.05		
6020 TUNE SOLN.	.65.04		
200.8 TUNE SOLN.	.65.05		

Analyzed By: Gen

Date: 5/3/16

SEQUENCE FILE : IF6E03

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
F6E03003	BLNK	16:21	05/03/16	1.00
F6E03004	S0	16:25	05/03/16	1.00
F6E03005	S1 0.5	16:30	05/03/16	1.00
F6E03006	S2 50	16:34	05/03/16	1.00
F6E03007	S3 250	16:38	05/03/16	1.00
F6E03008	S4 500	16:42	05/03/16	1.00
F6E03009	ICV	16:46	05/03/16	1.00
F6E03010	ICB	16:50	05/03/16	1.00
F6E03011	MRLE0201	16:54	05/03/16	1.00
F6E03012	MRLE0202	16:59	05/03/16	1.00
F6E03013	ICSA	17:03	05/03/16	1.00
F6E03014	ICSAB	17:08	05/03/16	1.00
F6E03015	MRLE0204	17:12	05/03/16	1.00
F6E03016	MRLE0205	17:16	05/03/16	1.00
F6E03017	CCV1	17:21	05/03/16	1.00
F6E03018	CCB1	17:25	05/03/16	1.00
F6E03019	IME003SB	17:29	05/03/16	1.00
F6E03020	IME003SL	17:33	05/03/16	1.00
F6E03021	E003-01M	17:38	05/03/16	1.00
F6E03022	E003-01A	17:42	05/03/16	1.00
F6E03023	E003-01	17:46	05/03/16	1.00
F6E03024	E003-01J	17:50	05/03/16	5.00
F6E03025	E003-01D	17:55	05/03/16	1.00
F6E03026	E003-02	17:59	05/03/16	1.00
F6E03027	E003-03	18:03	05/03/16	1.00
F6E03028	BLANK	18:07	05/03/16	1.00
F6E03029	CCV2	18:12	05/03/16	1.00
F6E03030	CCB2	18:17	05/03/16	1.00
F6E03031	E003-04	18:21	05/03/16	1.00
F6E03032	E003-05	18:25	05/03/16	1.00
F6E03033	E003-06	18:30	05/03/16	1.00
F6E03034	E003-07	18:34	05/03/16	1.00
F6E03035	E003-08	18:38	05/03/16	1.00
F6E03036	BLANK	18:43	05/03/16	1.00
F6E03037	CCV3	18:47	05/03/16	1.00
F6E03038	CCB3	18:51	05/03/16	1.00

SDG : 16E003 UNIT : % ICPMS CHECK : IF6E03 DATE : 05/03/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	106	110	106	104	99	97	106	100	101	103	100	101	100	96	100	96	99	96	95	100	102	101	95	98	104	100	103	100	103	91	100	96	99
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0201	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0202	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	98	95	93	----	101	97	97	105	----	----	----	95	----	----	----	----	----	----	----	----	99	----	----	----	----	----	----	----	----	----
ICSAB	103	103	100	98	94	93	103	100	99	96	105	101	102	101	95	103	96	96	102	104	110	102	49*	99	93	101	102	104	100	98	105	97	101
MRLE0204	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0205	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	101	101	101	100	97	95	99	100	98	98	101	99	97	99	99	100	99	97	99	100	100	98	101	99	97	101	102	99	101	98	100	95	98
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME003SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME003SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	106	109	107	95	92	91	97	96	98	97	100	101	99	100	100	103	103	100	99	101	102	100	101	98	98	101	102	98	101	100	103	98	101
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	104	107	102	96	92	90	97	97	97	98	101	102	101	101	100	103	103	98	98	101	103	101	103	99	97	101	101	98	101	99	101	97	99
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

SDG : 160003 UNIT : UG/L SUMMARY of CALIBRATION BLANKS : IF6E03 (SOIL) DATE : 05/03/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	.285	.001	-.733	.348	.228	.267	1.14	-.721	-4.35	.874	-.015	-.038	-.011	.031	2.70	.000	.008	.392	.062	.046	.083	.001	.013	.143	.001	-.006	.073	.127	.008	.036	.031	.006	.023
MRLE0201	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0202	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	.584	.012	.383	----	----	----	5.14	----	----	----	----	.012	1.27	.319	----	.271	.188	.861	1.90	.160	.077	.649	.154	----	.020	.215	.035	.089	.099	.128	.004	.205	.005
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0204	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0205	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	.195	-.002	-.656	-2.11	.496	.284	.939	-.844	-4.18	.773	-.009	-.026	-.019	.019	2.28	-.002	.002	.388	.069	.027	.059	.000	.007	.123	.001	-.006	.037	.251	.004	.018	.007	.003	.015
IME003SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME003SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.047	-.002	-1.12	-1.79	-.294	-.357	.314	-.583	-5.24	1.63	-.013	.031	-.010	-.005	.984	-.005	-.005	-.131	-.048	.024	.029	.000	.007	.053	.000	-.004	.020	.355	.004	.010	.003	-.002	.008
E003-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E003-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	.093	-.003	-1.80	-3.36	-.277	-.309	.745	-.245	-4.19	2.56	-.014	.026	-.012	-.000	1.81	-.005	-.003	-.124	-.038	.033	.047	-.003	.007	.076	.000	.000	.036	.431	.005	.014	.005	-.001	.012

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E03001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E03002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	F6E03003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1201	F6E03004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	F6E03005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	F6E03006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	F6E03007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	F6E03008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	F6E03009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1201	F6E03010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	F6E03011	MRLE0201	0.5/50/4 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6E03012	MRLE0202	1/100/10 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	F6E03013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	F6E03014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	F6E03015	MRLE0204	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6E03016	MRLE0205	1/100/10 ppb	1.000				
20	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E03017	CCV1		1.000				
21	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E03018	CCB1		1.000				
22		Keyword		CALEND	End of CALIB						
23		Keyword		SMPLBEG	Start of SMPL						
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2101	F6E03019	IME003SB		1.000				
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2102	F6E03020	IME003SL		1.000				
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2103	F6E03021	E003-01M		1.000				
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2104	F6E03022	E003-01A		1.000				
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2105	F6E03023	E003-01		1.000				
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2106	F6E03024	E003-01J		5.000				
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2107	F6E03025	E003-01D		1.000				
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2108	F6E03026	E003-02		1.000				
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2109	F6E03027	E003-03		1.000				
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6E03028	BLANK		1.000				
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E03029	CCV2		1.000				
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E03030	CCB2		1.000				
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2110	F6E03031	E003-04		1.000				
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2111	F6E03032	E003-05		1.000				
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2112	F6E03033	E003-06		1.000				
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2201	F6E03034	E003-07		1.000				
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2202	F6E03035	E003-08		1.000				
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6E03036	BLANK		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
42	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E03037	CCV3		1.000				
43	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E03038	CCB3		1.000				
44		Keyword		SMPLEND	End of SMPL						
45		Keyword		End	End of Sequence						
46		Keyword		CCVBEG	Start of CCV						
47		Keyword		CCVEND	End of CCV						
48		Keyword		BLKBEG	Start of BLANK						
49		Keyword		BLKEND	End of BLANK						
50		Keyword		ERRBEG	Start of ERRTERM						
51		Keyword		ERREND	End of ERRTERM						

Last Calib: May 03, 2016 04:45 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62016\e\if6e03.b\f6e03004.d\f6e03004.d#	S0	May 3 2016 04:25 pm
2	c:\data\if62016\e\if6e03.b\f6e03005.d\f6e03005.d#	S1 0.5	May 3 2016 04:30 pm
3	c:\data\if62016\e\if6e03.b\f6e03006.d\f6e03006.d#	S2 50	May 3 2016 04:34 pm
4	c:\data\if62016\e\if6e03.b\f6e03007.d\f6e03007.d#	S3 250	May 3 2016 04:38 pm
5	c:\data\if62016\e\if6e03.b\f6e03008.d\f6e03008.d#	S4 500	May 3 2016 04:42 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

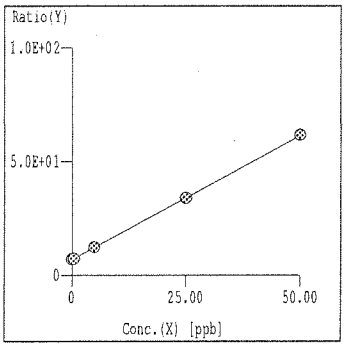
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

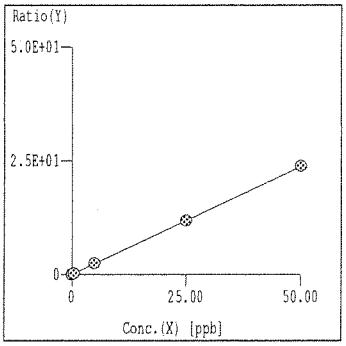
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 7 Li 6 ppb



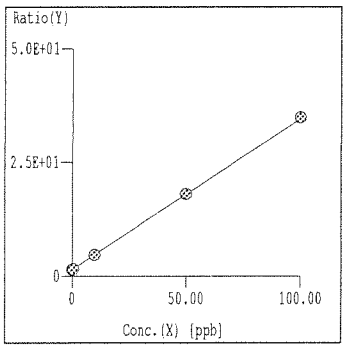
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.090E+000*X +6.767E+000
X = 9.171E-001*Y -6.206E+000
DL = 1.993E-01 ppb
BEC = 6.206 ppb

Step Mass Element ISTD Unit
(3) 9 Be 6 ppb



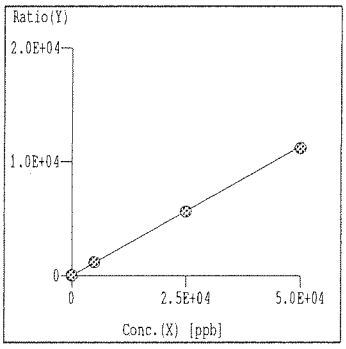
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.744E-001*X +3.635E-003
X = 2.108E+000*Y -7.662E-003
DL = 4.884E-03 ppb
BEC = 7.662E-03 ppb

Step Mass Element ISTD Unit
(3) 11 B 6 ppb



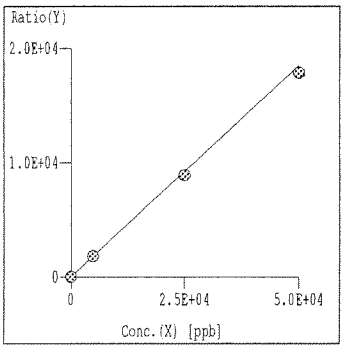
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.318E-001*X +1.400E+000
X = 3.014E+000*Y -4.219E+000
DL = 2.403E-01 ppb
BEC = 4.219 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



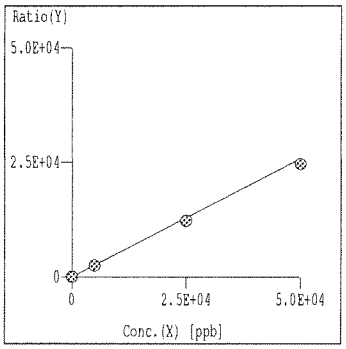
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.269E-001*X +5.628E+000
X = 4.407E+000*Y -2.480E+001
DL = 4.988E-01 ppb
BEC = 24.80 ppb

Step Mass Element ISTD Unit
(3) 24 Mg 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 3.703E-001*X +2.872E-001
X = 2.700E+000*Y -7.755E-001
DL = 2.608E-01 ppb
BEC = 7.755E-01 ppb

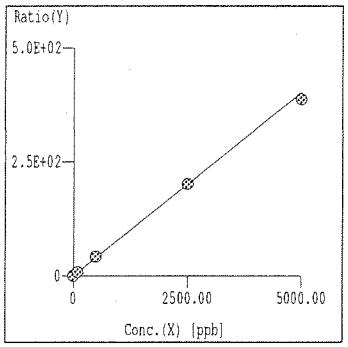
Step Mass Element ISTD Unit
(3) 27 Al 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.171E-001*X +3.311E-001
X = 1.934E+000*Y -6.403E-001
DL = 7.475E-02 ppb
BEC = 6.403E-01 ppb

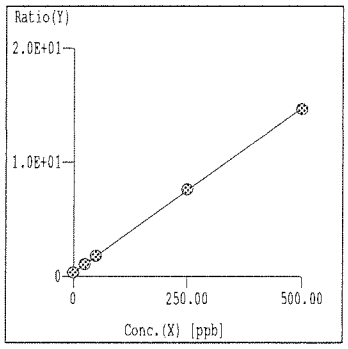
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(1) 28 Si	45	ppb



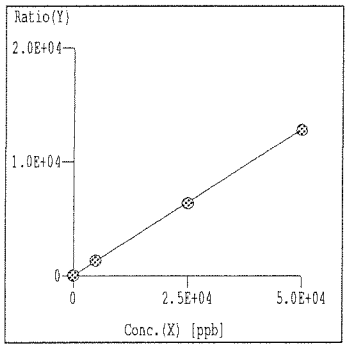
Curve Fit: Y=aX+b
r = 0.9998
Y = 8.050E-002*X +9.565E-002
X = 1.242E+001*Y -1.188E+000
DL = 3.872E-01 ppb
BEC = 1.188 ppb

Step Mass Element	ISTD	Unit
(3) 31 P	45	ppb



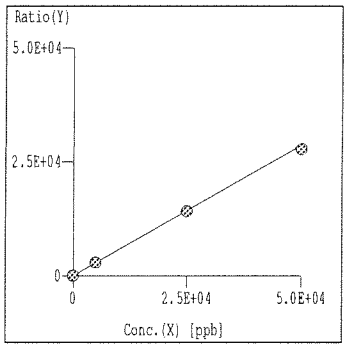
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.886E-002*X +3.381E-001
X = 3.465E+001*Y -1.171E+001
DL = 1.764 ppb
BEC = 11.71 ppb

Step Mass Element	ISTD	Unit
(2) 39 K	45	ppb



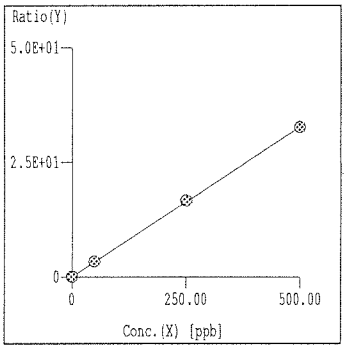
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.573E-001*X +1.343E+001
X = 3.887E+000*Y -5.219E+001
DL = 3.054 ppb
BEC = 52.19 ppb

Step Mass Element	ISTD	Unit
(1) 40 Ca	45	ppb



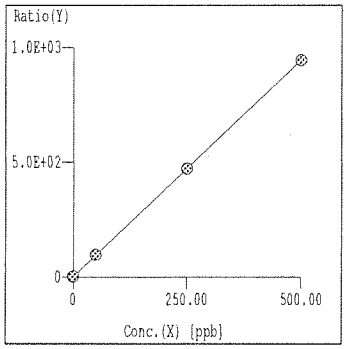
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.726E-001*X +2.642E+000
X = 1.746E+000*Y -4.613E+000
DL = 1.593E-01 ppb
BEC = 4.613 ppb

Step Mass Element	ISTD	Unit
(3) 47 Ti	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.553E-002*X +2.968E-003
X = 1.526E+001*Y -4.530E-002
DL = 2.960E-02 ppb
BEC = 4.530E-02 ppb

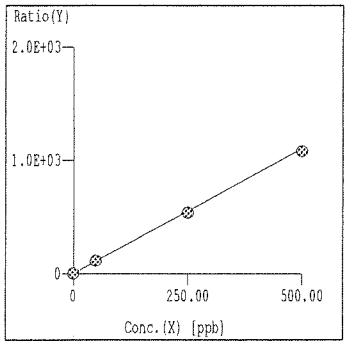
Step Mass Element	ISTD	Unit
(2) 51 V	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.890E+000*X +6.145E-001
X = 5.292E-001*Y -3.252E-001
DL = 3.042E-02 ppb
BEC = 3.252E-01 ppb

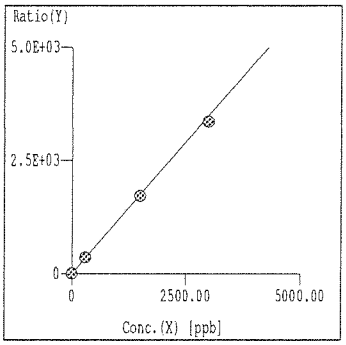
=== Graph Detail ===

Step Mass Element ISTD Unit
(2) 52 Cr 45 ppb



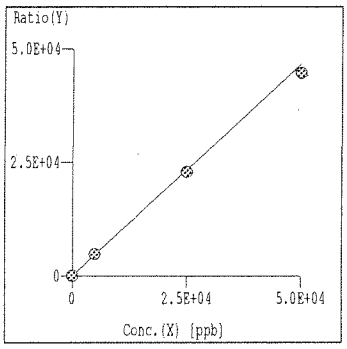
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.208E+000*X +2.234E-001
X = 4.528E-001*Y -1.012E-001
DL = 1.817E-02 ppb
BEC = 1.012E-01 ppb

Step Mass Element ISTD Unit
(3) 55 Mn 45 ppb



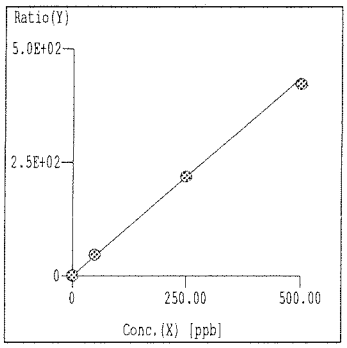
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.163E+000*X +6.432E-002
X = 8.596E-001*Y -5.529E-002
DL = 6.573E-03 ppb
BEC = 5.529E-02 ppb

Step Mass Element ISTD Unit
(1) 56 Fe 45 ppb



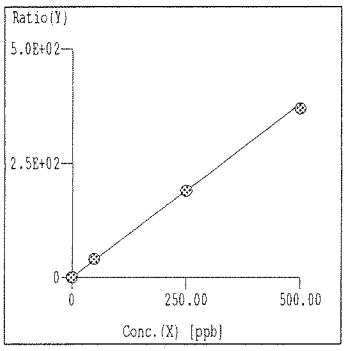
Curve Fit: Y=aX+b
r = 0.9999
Y = 9.354E-001*X +6.161E-001
X = 1.069E+000*Y -6.586E-001
DL = 2.791E-02 ppb
BEC = 6.586E-01 ppb

Step Mass Element ISTD Unit
(3) 59 Co 45 ppb



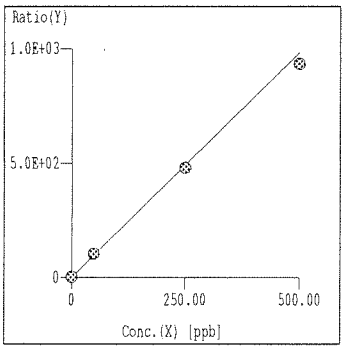
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.728E-001*X +1.093E-002
X = 1.146E+000*Y -1.253E-002
DL = 4.603E-03 ppb
BEC = 1.253E-02 ppb

Step Mass Element ISTD Unit
(2) 60 Ni 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 7.630E-001*X +1.906E-002
X = 1.311E+000*Y -2.497E-002
DL = 5.382E-03 ppb
BEC = 2.497E-02 ppb

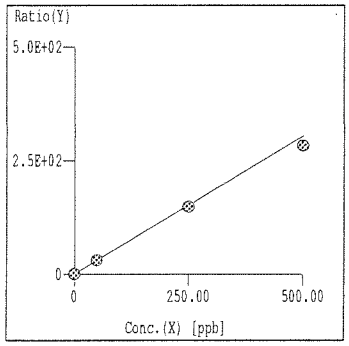
Step Mass Element ISTD Unit
(2) 63 Cu 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.969E+000*X +3.426E-001
X = 5.079E-001*Y -1.740E-001
DL = 4.700E-02 ppb
BEC = 1.740E-01 ppb

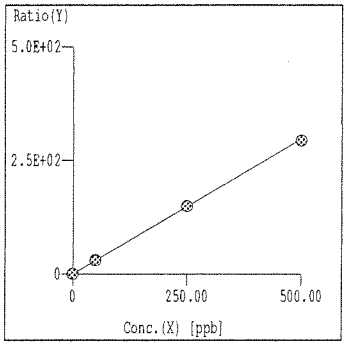
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 66 Zn 72 ppb



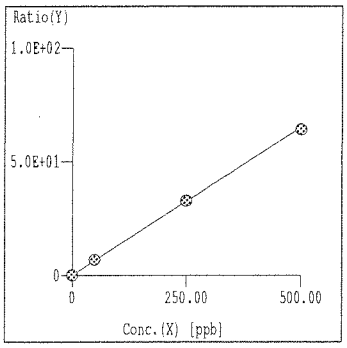
Curve Fit: Y=aX+b
r = 0.9997
Y = 6.081E-001*X +2.494E-001
X = 1.645E+000*Y -4.102E-001
DL = 3.478E-02 ppb
BEC = 4.102E-01 ppb

Step Mass Element ISTD Unit
(2) 75 As 72 ppb



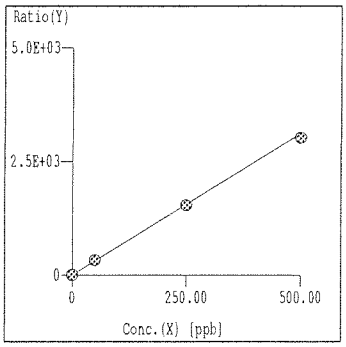
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.953E-001*X +2.739E-002
X = 1.680E+000*Y -4.602E-002
DL = 1.261E-02 ppb
BEC = 4.602E-02 ppb

Step Mass Element ISTD Unit
(1) 78 Se 72 ppb



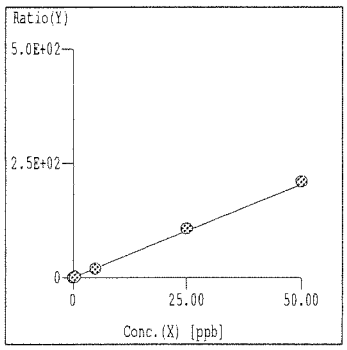
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.304E-001*X +9.670E-004
X = 7.669E+000*Y -7.416E-003
DL = 4.664E-03 ppb
BEC = 7.416E-03 ppb

Step Mass Element ISTD Unit
(3) 88 Sr 72 ppb



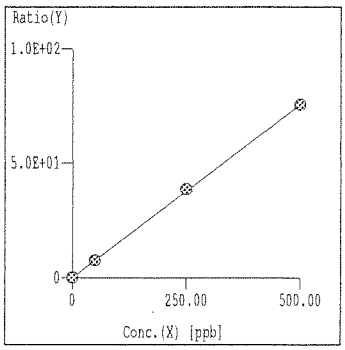
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.235E+000*X +9.884E-002
X = 1.604E-001*Y -1.585E-002
DL = 2.054E-03 ppb
BEC = 1.585E-02 ppb

Step Mass Element ISTD Unit
(3) 90 Zr 72 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 4.071E+000*X +2.407E-002
X = 2.457E-001*Y -5.912E-003
DL = 3.241E-03 ppb
BEC = 5.912E-03 ppb

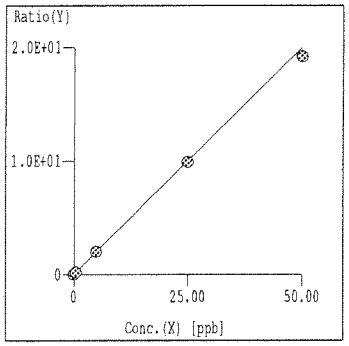
Step Mass Element ISTD Unit
(3) 95 Mo 115 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.511E-001*X +9.051E-004
X = 6.616E+000*Y -5.988E-003
DL = 4.537E-03 ppb
BEC = 5.988E-03 ppb

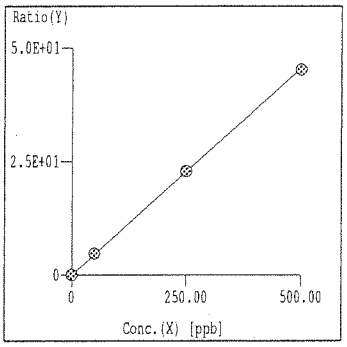
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 107 Ag 115 ppb



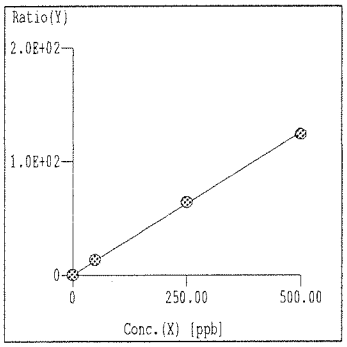
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.007E-001*X +2.769E-004
X = 2.496E+000*Y -6.910E-004
DL = 7.637E-04 ppb
BEC = 6.910E-04 ppb

Step Mass Element ISTD Unit
(3) 111 Cd 115 ppb



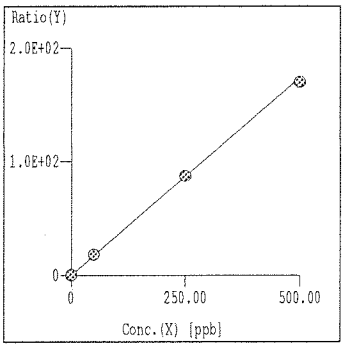
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.120E-002*X +4.433E-004
X = 1.097E+001*Y -4.861E-003
DL = 1.118E-02 ppb
BEC = 4.861E-03 ppb

Step Mass Element ISTD Unit
(3) 118 Sn 115 ppb



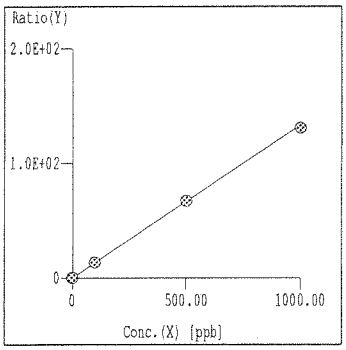
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.511E-001*X +4.007E-003
X = 3.983E+000*Y -1.596E-002
DL = 4.677E-03 ppb
BEC = 1.596E-02 ppb

Step Mass Element ISTD Unit
(3) 121 Sb 115 ppb



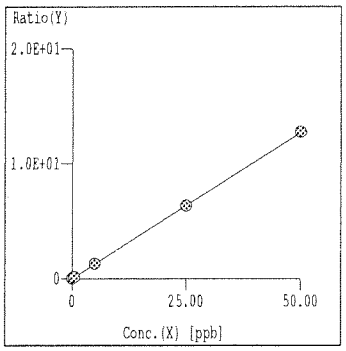
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.478E-001*X +9.108E-003
X = 2.875E+000*Y -2.618E-002
DL = 6.938E-03 ppb
BEC = 2.618E-02 ppb

Step Mass Element ISTD Unit
(3) 137 Ba 115 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.335E-001*X +1.735E-003
X = 7.491E+000*Y -1.300E-002
DL = 1.259E-02 ppb
BEC = 1.300E-02 ppb

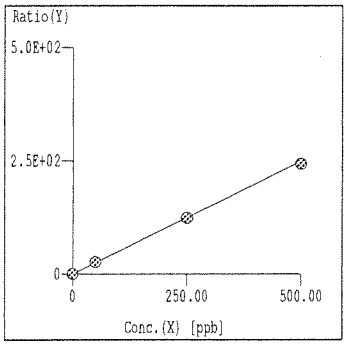
Step Mass Element ISTD Unit
(3) 182 W 159 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.543E-001*X +2.079E-003
X = 3.932E+000*Y -8.175E-003
DL = 2.952E-03 ppb
BEC = 8.175E-03 ppb

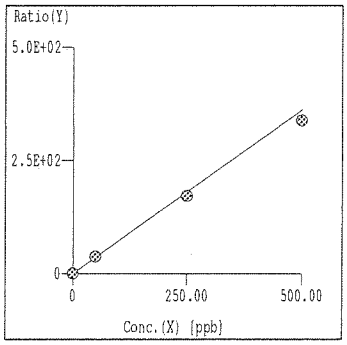
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



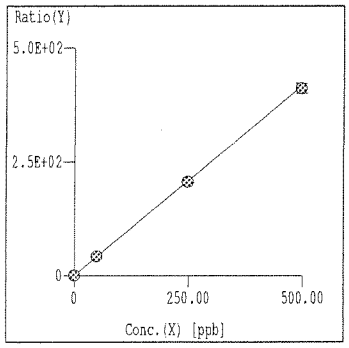
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.984E-001*X +1.802E-003
X = 2.006E+000*Y -3.615E-003
DL = 9.877E-04 ppb
BEC = 3.615E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 7.226E-001*X +8.420E-003
X = 1.384E+000*Y -1.165E-002
DL = 1.888E-03 ppb
BEC = 1.165E-02 ppb

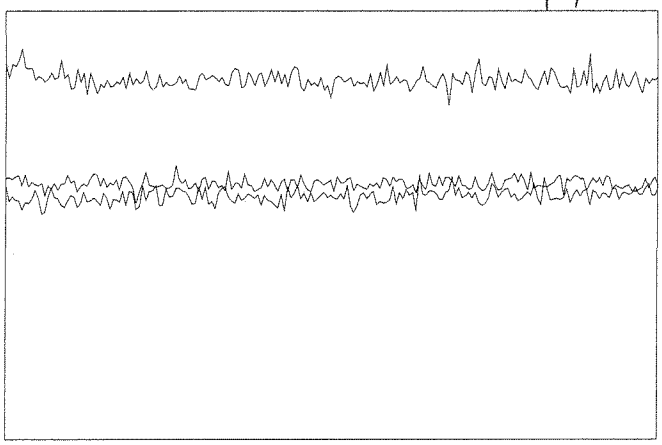
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 8.376E-001*X +1.410E-003
X = 1.194E+000*Y -1.683E-003
DL = 1.616E-03 ppb
BEC = 1.683E-03 ppb

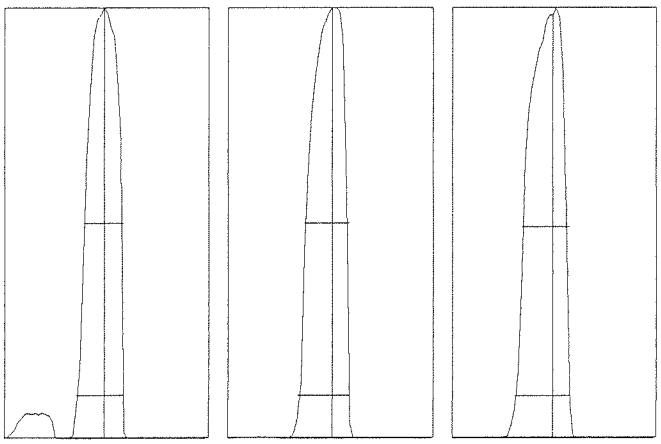
Tune Report

Tune File : NORM.U
Comment : IF6E02 / IF6E03 CW 5/7/16



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.308%
Doubly Charged:	70/140	0.698%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	11793.0	11371.4	2.87	1.00
89	100,000	59542.0	59884.4	2.19	2.10
205	50,000	42357.0	41978.8	2.29	6.00
156/140	5	1.672%	1.575%	4.87	
70/140	2	0.824%	0.747%	6.12	



m/z:	7	89	205
Height:	11,707	60,354	42,423
Axis:	7.00	89.05	205.00
W-50%:	0.60	0.65	0.70
W-10%:	0.700	0.7500	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : May 03, 2016 12:31:51
Printed : May 03, 2016 12:31:54

Tune Report

Tune File : NORM.U
Comment : IF6E02 /EB3 CW 6/3/16

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1.2 mm	Omega Lens-ce	:	1.6 V	Axis Offset	:	-0.02
Torch-V	:	-0.1 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.12 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2150 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1450 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

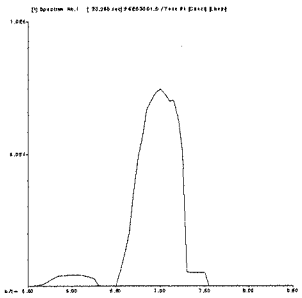
Generated : May 03, 2016 12:31:51
Printed : May 03, 2016 12:31:56

6020 QC Tune Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03001.D
Date Acquired:	May 3 2016 04:12 pm
Acq. Method:	TN6020_C.M
Operator:	CCapul
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	1.10	5.00	
59 Co	2.08	5.00	
115 In	0.97	5.00	
205 Tl	1.06	5.00	



7 Li

Mass Calib.

Actual: 7.05

Required: 6.90 - 7.10

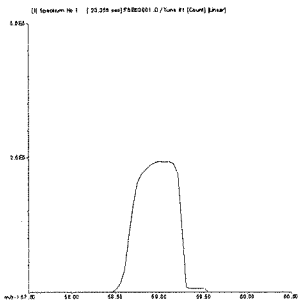
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



59 Co

Mass Calib.

Actual: 59.05

Required: 58.90 - 59.10

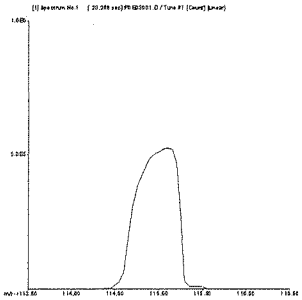
Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:



115 In

Mass Calib.

Actual: 115.05

Required: 114.90 - 115.10

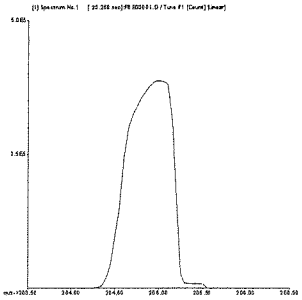
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03003
Date Acquired:	May 3 2016 04:21 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H
Last Cal Update:	May 03 2016 04:24 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	647652.88	A	13560.00	2.09
7	Li	44924.10	P	195.20	0.43
9	Be	21.11	P	12.62	59.78
11	B	11492.61	P	134.90	1.17
23	Na	73292.99	P	602.70	0.82
24	Mg	7887.92	P	114.80	1.46
27	Al	10351.77	P	265.50	2.56
28	Si	1835.74	P	87.02	4.74
31	P	8478.55	P	220.30	2.60
39	K	36605.05	P	575.70	1.57
40	Ca	50069.96	P	602.10	1.20
45	Sc	1230490.00	A	31690.00	2.58
45	Sc	267774.59	P	1616.00	0.60
45	Sc	2473424.00	A	20800.00	0.84
47	Ti	64.45	P	5.09	7.90
51	V	1715.00	P	62.13	3.62
52	Cr	678.24	P	25.86	3.81
55	Mn	1693.49	P	66.93	3.95
56	Fe	12529.20	P	254.30	2.03
59	Co	223.34	P	27.29	12.22
60	Ni	53.78	P	7.81	14.53
63	Cu	1842.57	P	56.46	3.06
66	Zn	1966.87	P	29.06	1.48
72	Ge	370088.81	P	4489.00	1.21
72	Ge	162215.80	P	949.10	0.59
72	Ge	659550.38	P	1919.00	0.29
75	As	54.67	P	12.72	23.27
78	Se	3.11	P	1.93	61.87
88	Sr	806.72	P	75.13	9.31
90	Zr	280.01	P	20.00	7.14
95	Mo	52.22	P	11.71	22.42
107	Ag	33.33	P	14.53	43.59
111	Cd	6.02	P	13.58	225.45
115	In	5161469.00	A	77050.00	1.49
118	Sn	213.34	P	32.15	15.07
121	Sb	452.25	P	63.63	14.07
137	Ba	186.68	P	15.28	8.19
159	Tb	7449294.00	A	31080.00	0.42
182	W	148.90	P	26.74	17.96
205	Tl	131.12	P	21.69	16.54
208	Pb	965.61	P	69.47	7.19
209	Bi	4669080.00	A	13900.00	0.30
235	U	10.00	P	8.82	88.19
238	U	134.45	P	24.12	17.94

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03004
Date Acquired:	May 3 2016 04:25 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H
Last Cal Update:	May 03 2016 04:24 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	667111.13	A	1740.00	0.26
7	Li	46475.36	P	362.40	0.78
9	Be	24.45	P	5.09	20.83
11	B	9435.53	P	185.40	1.96
23	Na	69726.83	P	309.50	0.44
24	Mg	6482.80	P	764.60	11.79
27	Al	8106.94	P	243.60	3.00
28	Si	1101.20	P	139.60	12.68
31	P	8221.55	P	339.40	4.13
39	K	34504.46	P	297.00	0.86
40	Ca	32376.82	P	174.20	0.54
45	Sc	1240412.00	A	13510.00	1.09
45	Sc	269182.69	P	3253.00	1.21
45	Sc	2477756.00	A	30250.00	1.22
47	Ti	58.89	P	16.78	28.49
51	V	1592.54	P	49.81	3.13
52	Cr	588.46	P	34.37	5.84
55	Mn	1544.59	P	44.77	2.90
56	Fe	7635.62	P	125.00	1.64
59	Co	196.68	P	31.80	16.17
60	Ni	50.22	P	3.79	7.55
63	Cu	2894.98	P	61.22	2.11
66	Zn	1823.52	P	40.55	2.22
72	Ge	375477.50	P	1406.00	0.37
72	Ge	162224.09	P	384.20	0.24
72	Ge	660227.69	P	2572.00	0.39
75	As	44.67	P	4.16	9.32
78	Se	3.56	P	0.77	21.65
88	Sr	646.71	P	30.55	4.72
90	Zr	208.90	P	28.35	13.57
95	Mo	46.67	P	12.02	25.76
107	Ag	14.44	P	5.09	35.25
111	Cd	20.45	P	17.52	85.67
115	In	5115350.00	A	41120.00	0.80
118	Sn	114.45	P	20.37	17.80
121	Sb	397.80	P	38.35	9.64
137	Ba	93.34	P	29.06	31.13
159	Tb	7391126.00	A	44460.00	0.60
182	W	143.34	P	18.56	12.95
205	Tl	130.01	P	12.02	9.25
208	Pb	596.70	P	33.83	5.67
209	Bi	4687638.00	A	76980.00	1.64
235	U	5.56	P	1.93	34.65
238	U	102.23	P	33.39	32.66

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03005.D\F6E03005.D#
Date Acquired:	May 3 2016 04:30 pm
Operator:	CCapul
Sample Name:	S1 0.5
Misc Info:	
Vial Number:	1104
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 03 2016 04:28 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	654554.13	A	4007.00	0.61
7 Li	47089.43	P	619.70	1.32
9 Be	1555.69	P	54.20	3.48
11 B	10035.90	P	288.60	2.88
23 Na	222945.09	P	2539.00	1.14
24 Mg	474854.19	P	3362.00	0.71
27 Al	640001.63	P	533.20	0.08
28 Si	102761.10	P	1405.00	1.37
31 P	25863.67	P	609.50	2.36
39 K	70329.88	P	548.10	0.78
40 Ca	403120.69	P	5000.00	1.24
45 Sc	1236518.00	A	22950.00	1.86
45 Sc	264632.91	P	1970.00	0.74
45 Sc	2429237.00	A	7935.00	0.33
47 Ti	1011.19	P	52.75	5.22
51 V	4290.22	P	105.10	2.45
52 Cr	3564.46	P	95.78	2.69
55 Mn	16840.35	P	265.60	1.58
56 Fe	648044.31	P	1392.00	0.21
59 Co	12054.34	P	170.40	1.41
60 Ni	1164.94	P	28.96	2.49
63 Cu	3220.60	P	37.91	1.18
66 Zn	5360.08	P	3.83	0.07
72 Ge	369348.41	P	1992.00	0.54
72 Ge	160091.50	P	1609.00	1.01
72 Ge	640351.50	P	4665.00	0.73
75 As	519.12	P	3.29	0.63
78 Se	259.78	P	10.69	4.12
88 Sr	21804.20	P	590.40	2.71
90 Zr	11659.64	P	149.70	1.28
95 Mo	3729.52	P	221.40	5.94
107 Ag	9574.70	P	129.20	1.35
111 Cd	2364.08	P	87.27	3.69
115 In	5059161.00	A	36990.00	0.73
118 Sn	6774.11	P	50.08	0.74
121 Sb	9625.90	P	82.00	0.85
137 Ba	3413.90	P	115.90	3.39
159 Tb	7201599.00	A	47050.00	0.65
182 W	10224.31	P	113.60	1.11
205 Tl	21047.59	P	267.10	1.27
208 Pb	28547.62	P	104.30	0.37
209 Bi	4578298.00	A	40320.00	0.88
235 U	258.90	P	8.39	3.24
238 U	31060.53	P	597.00	1.92

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	654554.19	0.61	667111.13	98.1	60 - 125	
45 Sc	1236518.00	1.86	1240412.40	99.7	60 - 125	
45 Sc	264632.94	0.74	269182.69	98.3	60 - 125	
45 Sc	2429236.80	0.33	2477756.30	98.0	60 - 125	
72 Ge	369348.34	0.54	375477.53	98.4	60 - 125	
72 Ge	160091.47	1.01	162224.16	98.7	60 - 125	
72 Ge	640351.50	0.73	660227.75	97.0	60 - 125	
115 In	5059161.00	0.73	5115350.00	98.9	60 - 125	
159 Tb	7201599.00	0.65	7391125.50	97.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03006.D\F6E03006.D#
Date Acquired: May 3 2016 04:34 pm
Operator: CCapul
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 03 2016 04:33 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	637004.63	A	16170.00	2.54
7 Li	78578.90	P	958.90	1.22
9 Be	15560.74	P	135.80	0.87
11 B	29488.83	P	261.50	0.89
23 Na	13736080.00	A	349100.00	2.54
24 Mg	44483272.00	A	578000.00	1.30
27 Al	60610000.00	A	284800.00	0.47
28 Si	494704.81	P	13160.00	2.66
31 P	43836.15	P	548.40	1.25
39 K	3430378.00	A	26270.00	0.77
40 Ca	33710088.00	A	590700.00	1.75
45 Sc	1174481.00	A	20820.00	1.77
45 Sc	262784.09	P	2515.00	0.96
45 Sc	2452231.00	A	23910.00	0.98
47 Ti	82250.53	P	69.28	0.08
51 V	251761.09	P	1983.00	0.79
52 Cr	294717.00	P	2084.00	0.71
55 Mn	8599313.00	A	35860.00	0.42
56 Fe	56026328.00	A	777600.00	1.39
59 Co	1122773.00	A	15600.00	1.39
60 Ni	105254.10	P	232.60	0.22
63 Cu	272083.81	P	1634.00	0.60
66 Zn	196126.59	P	186.70	0.10
72 Ge	357464.09	P	6928.00	1.94
72 Ge	158206.00	P	1234.00	0.78
72 Ge	635388.81	P	1108.00	0.17
75 As	47282.81	P	328.90	0.70
78 Se	24061.31	P	604.60	2.51
88 Sr	2044702.00	A	5699.00	0.28
90 Zr	121767.20	P	2204.00	1.81
95 Mo	371880.50	P	5759.00	1.55
107 Ag	99153.12	P	583.20	0.59
111 Cd	231939.80	P	892.20	0.38
115 In	4926742.00	A	40960.00	0.83
118 Sn	646688.50	P	8053.00	1.25
121 Sb	883209.81	P	11670.00	1.32
137 Ba	661081.69	P	559.70	0.08
159 Tb	7193386.00	A	40770.00	0.57
182 W	91580.66	P	456.60	0.50
205 Tl	1879402.00	A	8102.00	0.43
208 Pb	2707345.00	A	5264.00	0.19
209 Bi	4372336.00	A	5755.00	0.13
235 U	21960.60	P	229.10	1.04
238 U	3013648.00	A	14490.00	0.48

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	637004.56	2.54	667111.13	95.5	60 - 125	
45 Sc	1174481.50	1.77	1240412.40	94.7	60 - 125	
45 Sc	262784.13	0.96	269182.69	97.6	60 - 125	
45 Sc	2452231.00	0.98	2477756.30	99.0	60 - 125	
72 Ge	357464.13	1.94	375477.53	95.2	60 - 125	
72 Ge	158206.00	0.78	162224.16	97.5	60 - 125	
72 Ge	635388.88	0.17	660227.75	96.2	60 - 125	
115 In	4926742.50	0.83	5115350.00	96.3	60 - 125	
159 Tb	7193385.50	0.57	7391125.50	97.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03007.D\F6E03007.D#
Date Acquired: May 3 2016 04:38 pm
Operator: CCapul
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 03 2016 04:37 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	621094.00	A	12220.00	1.97
7 Li	210573.91	P	2688.00	1.28
9 Be	73646.50	P	1573.00	2.14
11 B	111651.30	P	768.60	0.69
23 Na	66885380.00	A	167100.00	0.25
24 Mg	212453500.00	A	2632000.00	1.24
27 Al	291569500.00	A	5327000.00	1.83
28 Si	2397125.00	A	30020.00	1.25
31 P	181809.91	P	2500.00	1.38
39 K	16316300.00	A	96270.00	0.59
40 Ca	168363900.00	A	2269000.00	1.35
45 Sc	1193485.00	A	18690.00	1.57
45 Sc	257674.70	P	497.20	0.19
45 Sc	2391576.00	A	9422.00	0.39
47 Ti	397776.50	P	9111.00	2.29
51 V	1215101.00	A	11180.00	0.92
52 Cr	1379441.00	A	7172.00	0.52
55 Mn	40838260.00	A	839300.00	2.06
56 Fe	272905890.00	A	3505000.00	1.28
59 Co	5212283.00	A	26050.00	0.50
60 Ni	488832.19	P	1502.00	0.31
63 Cu	1235450.00	A	15130.00	1.22
66 Zn	908396.38	P	13400.00	1.48
72 Ge	351283.91	P	2533.00	0.72
72 Ge	151258.80	P	888.70	0.59
72 Ge	612516.13	P	15570.00	2.54
75 As	225711.30	P	692.60	0.31
78 Se	114824.50	P	1117.00	0.97
88 Sr	9384560.00	A	214400.00	2.28
90 Zr	654118.00	P	8647.00	1.32
95 Mo	1758928.00	A	22410.00	1.27
107 Ag	450944.50	P	4960.00	1.10
111 Cd	1041374.00	A	20590.00	1.98
115 In	4558896.00	A	64260.00	1.41
118 Sn	2916196.00	A	30670.00	1.05
121 Sb	3972206.00	A	44130.00	1.11
137 Ba	3050386.00	A	27310.00	0.90
159 Tb	6928393.00	A	30990.00	0.45
182 W	439080.69	P	2968.00	0.68
205 Tl	8567413.00	A	27500.00	0.32
208 Pb	11879260.00	A	87780.00	0.74
209 Bi	4038046.00	A	34050.00	0.84
235 U	105390.00	P	1628.00	1.54
238 U	14261860.00	A	83140.00	0.58

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	621094.00	1.97	667111.13	93.1	60 - 125	
45 Sc	1193485.30	1.57	1240412.40	96.2	60 - 125	
45 Sc	257674.66	0.19	269182.69	95.7	60 - 125	
45 Sc	2391576.50	0.39	2477756.30	96.5	60 - 125	
72 Ge	351283.88	0.72	375477.53	93.6	60 - 125	
72 Ge	151258.80	0.59	162224.16	93.2	60 - 125	
72 Ge	612516.06	2.54	660227.75	92.8	60 - 125	
115 In	4558896.00	1.41	5115350.00	89.1	60 - 125	
159 Tb	6928393.00	0.45	7391125.50	93.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03008.D\F6E03008.D#
Date Acquired:	May 3 2016 04:42 pm
Operator:	CCapul
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 03 2016 04:41 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	600771.13	A	7149.00	1.19
7 Li	370136.50	P	2091.00	0.56
9 Be	143303.20	P	1394.00	0.97
11 B	209039.20	P	2544.00	1.22
23 Na	132223700.00	A	922300.00	0.70
24 Mg	420907810.00	A	5114000.00	1.22
27 Al	579316990.00	A	11050000.00	1.91
28 Si	4589764.00	A	20100.00	0.44
31 P	345604.41	P	3405.00	0.99
39 K	31799420.00	A	259200.00	0.82
40 Ca	328768900.00	A	2067000.00	0.63
45 Sc	1185960.00	A	3768.00	0.32
45 Sc	248818.70	P	1082.00	0.43
45 Sc	2360247.00	A	9406.00	0.40
47 Ti	769950.38	P	4435.00	0.58
51 V	2347479.00	A	7912.00	0.34
52 Cr	2677928.00	A	9646.00	0.36
55 Mn	79044576.00	A	1015000.00	1.28
56 Fe	529611710.00	A	6790000.00	1.28
59 Co	9962501.00	A	70930.00	0.71
60 Ni	918879.13	P	3860.00	0.42
63 Cu	2323506.00	A	23780.00	1.02
66 Zn	1698843.00	A	10620.00	0.63
72 Ge	339175.59	P	3255.00	0.96
72 Ge	146237.91	P	1111.00	0.76
72 Ge	601193.81	P	5438.00	0.90
75 As	428880.00	P	1082.00	0.25
78 Se	217270.50	P	692.70	0.32
88 Sr	18125840.00	A	123200.00	0.68
90 Zr	1259351.00	A	4984.00	0.40
95 Mo	3301137.00	A	23240.00	0.70
107 Ag	839813.69	P	4322.00	0.51
111 Cd	1977831.00	A	16080.00	0.81
115 In	4378274.00	A	31190.00	0.71
118 Sn	5417651.00	A	28200.00	0.52
121 Sb	7431877.00	A	35150.00	0.47
137 Ba	5711849.00	A	68940.00	1.21
159 Tb	6649017.00	A	66020.00	0.99
182 W	847401.50	P	5809.00	0.69
205 Tl	16148160.00	A	95570.00	0.59
208 Pb	22459960.00	A	66350.00	0.30
209 Bi	3887037.00	A	18710.00	0.48
235 U	206067.91	P	1059.00	0.51
238 U	27351120.00	A	502500.00	1.84

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	600771.06	1.19	667111.13	90.1	60 - 125	
45 Sc	1185960.30	0.32	1240412.40	95.6	60 - 125	
45 Sc	248818.72	0.43	269182.69	92.4	60 - 125	
45 Sc	2360247.30	0.40	2477756.30	95.3	60 - 125	
72 Ge	339175.66	0.96	375477.53	90.3	60 - 125	
72 Ge	146237.92	0.76	162224.16	90.1	60 - 125	
72 Ge	601193.81	0.90	660227.75	91.1	60 - 125	
115 In	4378274.50	0.71	5115350.00	85.6	60 - 125	
159 Tb	6649016.50	0.99	7391125.50	90.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03009.D\F6E03009.D#
Date Acquired:	May 3 2016 04:46 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	31.83	ppb	247832.6	0.63	30.00	90 - 110	
9 Be	32.86	ppb	93184.4	1.10	30.00	90 - 110	
11 B	31.93	ppb	71671.9	1.39	30.00	90 - 110	
23 Na	31190.00	ppb	81677696.0	0.21	30000.00	90 - 110	
24 Mg	29750.00	ppb	256458400.0	0.15	30000.00	90 - 110	
27 Al	29150.00	ppb	350964290.0	0.45	30000.00	90 - 110	
28 Si	3169.00	ppb	2942694.0	0.72	3000.00	90 - 110	
31 P	298.70	ppb	208559.6 *	0.53	300.00	90 - 110	
39 K	30420.00	ppb	19297470.0	1.44	30000.00	90 - 110	
40 Ca	30990.00	ppb	204680300.0	0.08	30000.00	90 - 110	
47 Ti	301.40	ppb	459814.6	1.93	300.00	90 - 110	
51 V	301.60	ppb	1404381.0	0.58	300.00	90 - 110	
52 Cr	300.10	ppb	1631840.0	0.76	300.00	90 - 110	
55 Mn	1920.00	ppb	51989620.0	2.25	2000.00	90 - 110	
56 Fe	30000.00	ppb	323608380.0	0.31	30000.00	90 - 110	
59 Co	288.60	ppb	5862315.0	2.11	300.00	90 - 110	
60 Ni	296.20	ppb	556351.3	1.09	300.00	90 - 110	
63 Cu	286.70	ppb	1390422.0	0.32	300.00	90 - 110	
66 Zn	285.50	ppb	1032097.0	2.08	300.00	90 - 110	
75 As	300.40	ppb	259018.9	0.61	300.00	90 - 110	
78 Se	304.60	ppb	134780.4	0.64	300.00	90 - 110	
88 Sr	301.90	ppb	11177150.0	0.89	300.00	90 - 110	
90 Zr	28.59	ppb	691033.6	2.58	30.00	90 - 110	
95 Mo	293.60	ppb	1972573.0	0.83	300.00	90 - 110	
107 Ag	31.30	ppb	557598.3	1.71	30.00	90 - 110	
111 Cd	301.40	ppb	1222068.0	0.36	300.00	90 - 110	
118 Sn	309.60	ppb	3455516.0	2.24	300.00	90 - 110	
121 Sb	301.40	ppb	4660032.0	2.08	300.00	90 - 110	
137 Ba	308.30	ppb	1829262.0	2.52	300.00	90 - 110	
182 W	27.18	ppb	467863.3	1.67	30.00	90 - 110	
205 Tl	300.90	ppb	10146720.0	1.60	300.00	90 - 110	
208 Pb	286.60	ppb	14014160.0	1.43	300.00	90 - 110	
235 U	2.02	ppb	125307.5	1.41	2.20	90 - 110	
238 U	298.40	ppb	16910670.0	0.55	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	597555.4	0.66	667111.13	89.6	60 - 125	
45 Sc	1153239.0	0.28	1240412.40	93.0	60 - 125	
45 Sc	246126.3	0.01	269182.69	91.4	60 - 125	
45 Sc	2327945.8	1.01	2477756.30	94.0	60 - 125	
72 Ge	339336.6	0.41	375477.53	90.4	60 - 125	
72 Ge	144848.8	0.41	162224.16	89.3	60 - 125	
72 Ge	593778.9	1.69	660227.75	89.9	60 - 125	
115 In	4445348.5	0.98	5115350.00	86.9	60 - 125	
159 Tb	6766480.5	1.22	7391125.50	91.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03010.D\F6E03010.D#
Date Acquired:	May 3 2016 04:50 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.2848	ppb	46230.3	31.64	0.20	Fail
9 Be	0.0013	ppb	27.8	203.65	0.10	
11 B	-0.7326	ppb	7556.6	5.40	5.00	
23 Na	0.3483	ppb	68790.3	105.14	40.00	
24 Mg	0.2277	ppb	9045.3	30.41	10.00	
27 Al	0.2667	ppb	11422.6	11.20	20.00	
28 Si	1.1400	ppb	2258.0	12.97	20.00	
31 P	-0.7214	ppb	7726.8	11.10	10.00	
39 K	-4.3520	ppb	32579.1	13.22	20.00	
40 Ca	0.8741	ppb	37871.1	13.88	25.00	
47 Ti	-0.0154	ppb	47.8	33.70	0.50	
51 V	-0.0382	ppb	1435.4	27.72	0.50	
52 Cr	-0.0111	ppb	526.2	37.37	0.20	
55 Mn	0.0311	ppb	2447.0	17.09	0.20	
56 Fe	2.7010	ppb	37853.8	10.21	10.00	
59 Co	0.0002	ppb	271.1	843.05	0.20	
60 Ni	0.0077	ppb	66.0	17.59	0.20	
63 Cu	0.3922	ppb	2951.2	1.03	0.40	
66 Zn	0.0619	ppb	1851.3	28.51	2.00	
75 As	0.0459	ppb	87.3	23.28	0.20	
78 Se	0.0831	ppb	43.6	10.99	0.20	
90 Zr	0.0134	ppb	506.7	4.74	2.00	
95 Mo	0.1431	ppb	1136.8	5.82	0.40	
107 Ag	0.0011	ppb	36.7	15.14	0.20	
111 Cd	-0.0058	ppb	-4.0	88.24	0.20	
118 Sn	0.0731	ppb	1127.9	13.55	0.20	
121 Sb	0.1273	ppb	2693.7	8.32	0.40	
137 Ba	0.0078	ppb	140.0	57.59	0.20	
182 W	0.0365	ppb	835.6	17.52	1.00	
205 Tl	0.0309	ppb	1264.6	9.44	0.20	
208 Pb	0.0063	ppb	954.5	14.07	0.10	
235 U	0.0003	ppb	27.8	49.32	1.00	
238 U	0.0231	ppb	1525.7	11.80	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	653255.4	1.13	667111.13	97.9	60 - 125	
45 Sc	1205601.3	1.67	1240412.40	97.2	60 - 125	
45 Sc	264748.8	0.77	269182.69	98.4	60 - 125	
45 Sc	2435579.8	0.70	2477756.30	98.3	60 - 125	
72 Ge	369216.4	0.85	375477.53	98.3	60 - 125	
72 Ge	159660.8	0.19	162224.16	98.4	60 - 125	
72 Ge	644933.5	0.32	660227.75	97.7	60 - 125	
115 In	5041436.0	1.08	5115350.00	98.6	60 - 125	
159 Tb	7361948.0	0.62	7391125.50	99.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03011.D\F6E03011.D#
Date Acquired:	May 3 2016 04:54 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE0201
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	46402.4	0.0000	0.4925	ppb	33.99	50.00	
9 Be	# 3	6	1546.8	0.0000	0.5053	ppb	5.61	50.00	
11 B	# 3	6	8230.3	0.0000	-0.3152	ppb	15.42	100.00	
23 Na	# 1	45	215482.4	0.0000	55.0900	ppb	1.10	50000.00	
24 Mg	# 3	45	461253.6	0.0000	51.5500	ppb	1.28	50000.00	
27 Al	# 3	45	630295.6	0.0000	50.5700	ppb	1.52	50000.00	
28 Si	# 1	45	1356.8	0.0000	0.2298	ppb	35.84	5000.00	
31 P	# 3	45	7562.4	0.0000	-0.7028	ppb	61.00	500.00	
39 K	# 2	45	67456.5	0.0000	47.8700	ppb	1.28	50000.00	
40 Ca	# 1	45	391603.1	0.0000	52.9200	ppb	1.11	50000.00	
47 Ti	# 3	45	883.4	0.0000	0.5208	ppb	10.73	500.00	
51 V	# 2	45	4048.4	0.0000	0.4923	ppb	2.26	500.00	
52 Cr	# 2	45	3492.0	0.0000	0.5023	ppb	3.15	500.00	
55 Mn	# 3	45	17135.2	0.0000	0.5635	ppb	1.20	3000.00	
56 Fe	# 1	45	634861.6	0.0000	56.4400	ppb	1.34	50000.00	
59 Co	# 3	45	12127.7	0.0000	0.5713	ppb	2.13	500.00	
60 Ni	# 2	45	1146.7	0.0000	0.5484	ppb	3.57	500.00	
63 Cu	# 2	45	3297.3	0.0000	0.4651	ppb	1.71	500.00	
66 Zn	# 3	72	17588.0	0.0000	4.1860	ppb	0.90	500.00	
75 As	# 2	72	540.2	0.0000	0.5300	ppb	2.96	500.00	
78 Se	# 1	72	268.0	0.0000	0.5590	ppb	4.30	500.00	
88 Sr	# 3	72	21909.9	0.0000	0.5426	ppb	1.34	500.00	
90 Zr	# 3	72	392.2	0.0000	0.0094	ppb	13.14	50.00	
95 Mo	# 3	115	4185.2	0.0000	0.5383	ppb	6.58	500.00	
107 Ag	# 3	115	6702.9	0.0000	0.3281	ppb	4.16	50.00	
111 Cd	# 3	115	2484.2	0.0000	0.5305	ppb	3.90	500.00	
118 Sn	# 3	115	7324.4	0.0000	0.5574	ppb	1.63	500.00	
121 Sb	# 3	115	10909.1	0.0000	0.5903	ppb	1.25	500.00	
137 Ba	# 3	115	3526.2	0.0000	0.5061	ppb	2.95	1000.00	
182 W	# 3	159	457.8	0.0000	0.0162	ppb	23.32	50.00	
205 Tl	# 3	159	21754.2	0.0000	0.5861	ppb	1.69	500.00	
208 Pb	# 3	159	29146.0	0.0000	0.5333	ppb	1.13	500.00	
235 U	# 3	159	246.7	0.0000	0.0035	ppb	12.46	30.00	
238 U	# 3	159	32566.4	0.0000	0.5236	ppb	1.03	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	635498.06	1.95	667111.13	95.3	60 - 125	
45 Sc # 1	1188689.80	0.09	1240412.40	95.8	60 - 125	
45 Sc # 2	262064.77	1.01	269182.69	97.4	60 - 125	
45 Sc # 3	2380360.50	1.20	2477756.30	96.1	60 - 125	
72 Ge # 1	362974.63	0.91	375477.53	96.7	60 - 125	
72 Ge # 2	157545.66	0.14	162224.16	97.1	60 - 125	
72 Ge # 3	629256.25	0.66	660227.75	95.3	60 - 125	
115 In # 3	5087568.50	0.48	5115350.00	99.5	60 - 125	
159 Tb # 3	7402089.00	0.82	7391125.50	100.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03012.D\F6E03012.D#
Date Acquired:	May 3 2016 04:59 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE0202
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	49199.1	0.0000	1.0090	ppb	10.39	50.00	
9 Be	# 3	6	3016.0	0.0000	1.0090	ppb	2.33	50.00	
11 B	# 3	6	27509.7	0.0000	9.0390	ppb	4.14	100.00	
23 Na	# 1	45	351490.7	0.0000	107.9000	ppb	2.22	50000.00	
24 Mg	# 3	45	872771.2	0.0000	98.0700	ppb	3.49	50000.00	
27 Al	# 3	45	1184725.0	0.0000	95.4300	ppb	2.41	50000.00	
28 Si	# 1	45	1699.0	0.0000	0.6204	ppb	7.92	5000.00	
31 P	# 3	45	7636.9	0.0000	-0.6167	ppb	70.29	500.00	
39 K	# 2	45	100200.0	0.0000	100.0000	ppb	2.76	50000.00	
40 Ca	# 1	45	717602.5	0.0000	102.8000	ppb	0.79	50000.00	
47 Ti	# 3	45	1696.8	0.0000	1.0400	ppb	11.79	500.00	
51 V	# 2	45	6328.3	0.0000	0.9835	ppb	0.83	500.00	
52 Cr	# 2	45	6214.3	0.0000	0.9984	ppb	0.76	500.00	
55 Mn	# 3	45	31866.9	0.0000	1.0930	ppb	3.06	3000.00	
56 Fe	# 1	45	1162108.0	0.0000	105.8000	ppb	1.30	50000.00	
59 Co	# 3	45	23718.0	0.0000	1.1270	ppb	5.64	500.00	
60 Ni	# 2	45	2167.3	0.0000	1.0850	ppb	1.03	500.00	
63 Cu	# 2	45	5731.2	0.0000	0.9634	ppb	1.07	500.00	
66 Zn	# 3	72	41562.0	0.0000	10.6000	ppb	0.84	500.00	
75 As	# 2	72	1007.6	0.0000	1.0440	ppb	2.20	500.00	
78 Se	# 1	72	479.1	0.0000	1.0350	ppb	3.41	500.00	
88 Sr	# 3	72	85173.5	0.0000	2.1840	ppb	1.58	500.00	
90 Zr	# 3	72	700.0	0.0000	0.0218	ppb	5.66	50.00	
95 Mo	# 3	115	7558.9	0.0000	0.9862	ppb	1.24	500.00	
107 Ag	# 3	115	21158.8	0.0000	1.0470	ppb	1.23	50.00	
111 Cd	# 3	115	4704.0	0.0000	1.0180	ppb	2.25	500.00	
118 Sn	# 3	115	13755.0	0.0000	1.0710	ppb	0.82	500.00	
121 Sb	# 3	115	21946.8	0.0000	1.2260	ppb	1.33	500.00	
137 Ba	# 3	115	6944.2	0.0000	1.0190	ppb	2.55	1000.00	
182 W	# 3	159	427.8	0.0000	0.0143	ppb	20.54	50.00	
205 Tl	# 3	159	41232.4	0.0000	1.1030	ppb	2.06	500.00	
208 Pb	# 3	159	57204.9	0.0000	1.0470	ppb	0.95	500.00	
235 U	# 3	159	465.6	0.0000	0.0067	ppb	10.47	30.00	
238 U	# 3	159	62156.3	0.0000	0.9912	ppb	1.67	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	625467.88	1.32	667111.13	93.8	60 - 125	
45 Sc # 1	1167223.30	1.62	1240412.40	94.1	60 - 125	
45 Sc # 2	255909.97	0.78	269182.69	95.1	60 - 125	
45 Sc # 3	2385320.30	1.94	2477756.30	96.3	60 - 125	
72 Ge # 1	352421.69	0.58	375477.53	93.9	60 - 125	
72 Ge # 2	155301.23	0.86	162224.16	95.7	60 - 125	
72 Ge # 3	621053.38	0.87	660227.75	94.1	60 - 125	
115 In # 3	5040763.50	0.28	5115350.00	98.5	60 - 125	
159 Tb # 3	7475193.00	1.08	7391125.50	101.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed

0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass

ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03013.D\F6E03013.D#
Date Acquired:	May 3 2016 05:03 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.58	ppb	39725.6	5.78	---	
9 Be	0.01	ppb	48.9	57.11	---	
11 B	0.38	ppb	8193.6	40.71	---	
23 Na	97760.00	ppb	234289410.0	2.17	120000.00	
24 Mg	94910.00	ppb	771490110.0	1.48	120000.00	
27 Al	92940.00	ppb	1054937000.0	1.95	120000.00	
28 Si	5.14	ppb	5374.5	4.25	---	
31 P	101300.00	ppb	64188980.0	0.59	---	
39 K	97370.00	ppb	59024780.0	0.33	120000.00	
40 Ca	96770.00	ppb	585077630.0	2.76	120000.00	
47 Ti	2095.00	ppb	3014122.0	0.31	2400.00	
51 V	0.01	ppb	1499.0	162.43	---	
52 Cr	1.28	ppb	7156.7	0.53	---	
55 Mn	0.32	ppb	9555.7	0.81	---	
56 Fe	95110.00	ppb	939525630.0	1.98	120000.00	
59 Co	0.27	ppb	5423.4	3.37	---	
60 Ni	0.19	ppb	383.1	5.23	---	
63 Cu	0.86	ppb	4798.6	0.60	---	
66 Zn	1.90	ppb	8237.1	1.57	---	
75 As	0.16	ppb	171.8	2.56	---	
78 Se	0.08	ppb	34.0	18.22	---	
88 Sr	0.65	ppb	24324.9	0.86	---	
90 Zr	0.15	ppb	3817.3	4.16	---	
95 Mo	1986.00	ppb	12431300.0	1.44	2400.00	
107 Ag	0.02	ppb	346.7	11.14	---	
111 Cd	0.21	ppb	827.9	34.97	---	
118 Sn	0.04	ppb	531.1	8.44	---	
121 Sb	0.09	ppb	1652.4	2.49	---	
137 Ba	0.10	ppb	621.1	3.08	---	
182 W	0.13	ppb	2154.7	3.10	---	
205 Tl	0.00	ppb	243.3	15.73	---	
208 Pb	0.20	ppb	9719.5	3.26	---	
235 U	0.00	ppb	15.6	19.68	---	
238 U	0.00	ppb	337.8	5.95	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	536553.9	0.43	667111.13	80.4	60 - 125	
45 Sc	1056181.5	1.70	1240412.40	85.1	60 - 125	
45 Sc	235493.8	0.56	269182.69	87.5	60 - 125	
45 Sc	2194983.5	0.59	2477756.30	88.6	60 - 125	
72 Ge	307572.3	1.32	375477.53	81.9	60 - 125	
72 Ge	139999.7	0.37	162224.16	86.3	60 - 125	
72 Ge	586600.4	1.42	660227.75	88.8	60 - 125	
115 In	4140740.8	0.71	5115350.00	80.9	60 - 125	
159 Tb	6222104.0	1.33	7391125.50	84.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03014.D\F6E03014.D#
Date Acquired:	May 3 2016 05:08 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.54	ppb	157618.3	0.85	20.00	80 - 120	
9 Be	20.61	ppb	52857.3	0.95	20.00	80 - 120	
11 B	19.99	ppb	43402.9	2.30	20.00	80 - 120	
23 Na	97780.00	ppb	249379500.0	1.35	100000.00	80 - 120	
24 Mg	93900.00	ppb	784670080.0	0.83	100000.00	80 - 120	
27 Al	93130.00	ppb	1086653100.0	0.11	100000.00	80 - 120	
28 Si	206.50	ppb	187906.0	0.49	200.00	80 - 120	
31 P	100000.00	ppb	65154848.0	0.24	100000.00	80 - 120	
39 K	99090.00	ppb	62279680.0	0.55	100000.00	80 - 120	
40 Ca	96310.00	ppb	619764420.0	0.65	100000.00	80 - 120	
47 Ti	2098.00	ppb	3101815.0	0.74	2000.00	80 - 120	
51 V	20.17	ppb	94574.7	0.95	20.00	80 - 120	
52 Cr	20.47	ppb	110943.7	0.49	20.00	80 - 120	
55 Mn	20.16	ppb	530622.1	1.03	20.00	80 - 120	
56 Fe	94580.00	ppb	994180990.0	0.42	100000.00	80 - 120	
59 Co	20.69	ppb	407778.2	0.61	20.00	80 - 120	
60 Ni	19.23	ppb	35864.3	0.97	20.00	80 - 120	
63 Cu	19.12	ppb	92782.3	0.26	20.00	80 - 120	
66 Zn	20.42	ppb	74789.1	0.53	20.00	80 - 120	
75 As	20.86	ppb	17989.4	2.21	20.00	80 - 120	
78 Se	22.03	ppb	9239.9	1.70	20.00	80 - 120	
88 Sr	20.43	ppb	752478.2	0.64	20.00	80 - 120	
90 Zr	9.74	ppb	234148.0	1.38	20.00	80 - 120	Fail
95 Mo	1972.00	ppb	12600130.0	0.94	2000.00	80 - 120	
107 Ag	18.55	ppb	314108.1	0.77	20.00	80 - 120	
111 Cd	20.27	ppb	78143.2	0.87	20.00	80 - 120	
118 Sn	20.48	ppb	217536.7	0.76	20.00	80 - 120	
121 Sb	20.76	ppb	305573.6	0.29	20.00	80 - 120	
137 Ba	20.02	ppb	113031.6	0.69	20.00	80 - 120	
182 W	19.58	ppb	313964.4	0.82	20.00	80 - 120	
205 Tl	20.96	ppb	658494.4	0.21	20.00	80 - 120	
208 Pb	19.48	ppb	887563.0	0.67	20.00	80 - 120	
235 U	0.13	ppb	7730.4	2.85	0.14	80 - 120	
238 U	20.19	ppb	1065762.0	0.41	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	540443.6	0.77	667111.13	81.0	60 - 125	
45 Sc	1123736.0	1.23	1240412.40	90.6	60 - 125	
45 Sc	244177.4	1.02	269182.69	90.7	60 - 125	
45 Sc	2256353.8	0.13	2477756.30	91.1	60 - 125	
72 Ge	321537.6	0.32	375477.53	85.6	60 - 125	
72 Ge	144579.3	1.86	162224.16	89.1	60 - 125	
72 Ge	590398.3	0.65	660227.75	89.4	60 - 125	
115 In	4226576.0	0.68	5115350.00	82.6	60 - 125	
159 Tb	6302603.5	0.06	7391125.50	85.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03015.D\F6E03015.D#
Date Acquired:	May 3 2016 05:12 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE0204
Misc Info:	500 ppb CAT
Vial Number:	1207
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	45196.2	0.0000	-0.1978	ppb	48.88	50.00	
9 Be	# 3	6	16.7	0.0000	-0.0026	ppb	65.47	50.00	
11 B	# 3	6	10902.1	0.0000	0.5461	ppb	41.84	100.00	
23 Na	# 1	45	1506480.0	0.0000	541.6000	ppb	0.98	50000.00	
24 Mg	# 3	45	5063311.0	0.0000	508.8000	ppb	1.96	50000.00	
27 Al	# 3	45	6826742.0	0.0000	491.4000	ppb	1.22	50000.00	
28 Si	# 1	45	2240.3	0.0000	1.1880	ppb	2.18	5000.00	
31 P	# 3	45	10051.7	0.0000	1.2670	ppb	29.25	500.00	
39 K	# 2	45	439147.1	0.0000	538.3000	ppb	1.65	50000.00	
40 Ca	# 1	45	3620564.0	0.0000	535.1000	ppb	1.18	50000.00	
47 Ti	# 3	45	295.6	0.0000	0.1228	ppb	11.00	500.00	
51 V	# 2	45	1812.1	0.0000	0.0066	ppb	66.47	500.00	
52 Cr	# 2	45	557.6	0.0000	-0.0138	ppb	51.86	500.00	
55 Mn	# 3	45	2822.6	0.0000	0.0351	ppb	8.37	3000.00	
56 Fe	# 1	45	5967865.0	0.0000	543.8000	ppb	0.41	50000.00	
59 Co	# 3	45	253.3	0.0000	-0.0017	ppb	44.95	500.00	
60 Ni	# 2	45	62.2	0.0000	0.0033	ppb	132.13	500.00	
63 Cu	# 2	45	413.6	0.0000	-0.1013	ppb	3.49	500.00	
66 Zn	# 3	72	2283.6	0.0000	0.1226	ppb	27.12	500.00	
75 As	# 2	72	57.8	0.0000	0.0097	ppb	91.23	500.00	
78 Se	# 1	72	14.9	0.0000	0.0245	ppb	11.29	500.00	
88 Sr	# 3	72	1631.3	0.0000	0.0213	ppb	12.69	500.00	
90 Zr	# 3	72	562.3	0.0000	0.0137	ppb	12.74	50.00	
95 Mo	# 3	115	4534.2	0.0000	0.5407	ppb	10.82	500.00	
107 Ag	# 3	115	42.2	0.0000	0.0012	ppb	28.06	50.00	
111 Cd	# 3	115	31.4	0.0000	0.0014	ppb	233.64	500.00	
118 Sn	# 3	115	341.1	0.0000	0.0088	ppb	26.72	500.00	
121 Sb	# 3	115	1380.1	0.0000	0.0461	ppb	9.55	500.00	
137 Ba	# 3	115	186.7	0.0000	0.0125	ppb	26.13	1000.00	
182 W	# 3	159	411.1	0.0000	0.0118	ppb	8.59	50.00	
205 Tl	# 3	159	338.9	0.0000	0.0048	ppb	4.17	500.00	
208 Pb	# 3	159	853.4	0.0000	0.0029	ppb	40.45	500.00	
235 U	# 3	159	13.3	0.0000	0.0001	ppb	139.84	30.00	
238 U	# 3	159	384.5	0.0000	0.0040	ppb	30.29	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	690007.06	2.23	667111.13	103.4	60 - 125	
45 Sc # 1	1171929.30	6.14	1240412.40	94.5	60 - 125	
45 Sc # 2	289058.03	0.84	269182.69	107.4	60 - 125	
45 Sc # 3	2683269.00	0.42	2477756.30	108.3	60 - 125	
72 Ge # 1	358652.16	3.98	375477.53	95.5	60 - 125	
72 Ge # 2	174435.86	0.56	162224.16	107.5	60 - 125	
72 Ge # 3	704733.25	0.93	660227.75	106.7	60 - 125	
115 In # 3	5488615.50	0.37	5115350.00	107.3	60 - 125	
159 Tb # 3	8110923.00	1.27	7391125.50	109.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Pass
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03016.D\F6E03016.D#
Date Acquired:	May 3 2016 05:16 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE0205
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	50448.6	0.0000	0.9946	ppb	12.53	50.00	
9 Be	# 3	6	2950.4	0.0000	0.9603	ppb	2.50	50.00	
11 B	# 3	6	29063.6	0.0000	9.4130	ppb	2.04	100.00	
23 Na	# 1	45	363386.4	0.0000	107.0000	ppb	2.78	50000.00	
24 Mg	# 3	45	927841.3	0.0000	100.0000	ppb	2.62	50000.00	
27 Al	# 3	45	1232727.0	0.0000	95.2800	ppb	3.25	50000.00	
28 Si	# 1	45	1672.4	0.0000	0.5199	ppb	20.81	5000.00	
31 P	# 3	45	7866.0	0.0000	-0.7490	ppb	31.26	500.00	
39 K	# 2	45	105433.3	0.0000	102.2000	ppb	2.37	50000.00	
40 Ca	# 1	45	763281.5	0.0000	105.1000	ppb	2.26	50000.00	
47 Ti	# 3	45	1791.3	0.0000	1.0550	ppb	5.38	500.00	
51 V	# 2	45	6658.9	0.0000	1.0020	ppb	1.32	500.00	
52 Cr	# 2	45	6400.1	0.0000	0.9906	ppb	2.83	500.00	
55 Mn	# 3	45	33318.1	0.0000	1.0970	ppb	1.25	3000.00	
56 Fe	# 1	45	1220537.0	0.0000	106.7000	ppb	0.96	50000.00	
59 Co	# 3	45	24149.7	0.0000	1.1010	ppb	2.31	500.00	
60 Ni	# 2	45	2255.7	0.0000	1.0880	ppb	0.45	500.00	
63 Cu	# 2	45	6074.4	0.0000	0.9882	ppb	2.67	500.00	
66 Zn	# 3	72	43590.0	0.0000	10.5000	ppb	0.14	500.00	
75 As	# 2	72	1014.5	0.0000	1.0010	ppb	1.47	500.00	
78 Se	# 1	72	518.2	0.0000	1.0680	ppb	3.55	500.00	
88 Sr	# 3	72	90449.7	0.0000	2.1930	ppb	0.90	500.00	
90 Zr	# 3	72	733.4	0.0000	0.0215	ppb	6.64	50.00	
95 Mo	# 3	115	8721.9	0.0000	1.1000	ppb	2.86	500.00	
107 Ag	# 3	115	21971.2	0.0000	1.0500	ppb	0.96	50.00	
111 Cd	# 3	115	4964.7	0.0000	1.0380	ppb	3.17	500.00	
118 Sn	# 3	115	13789.6	0.0000	1.0360	ppb	1.01	500.00	
121 Sb	# 3	115	22058.1	0.0000	1.1890	ppb	0.62	500.00	
137 Ba	# 3	115	7153.2	0.0000	1.0140	ppb	3.18	1000.00	
182 W	# 3	159	364.5	0.0000	0.0105	ppb	29.87	50.00	
205 Tl	# 3	159	42565.6	0.0000	1.1060	ppb	1.32	500.00	
208 Pb	# 3	159	58869.2	0.0000	1.0470	ppb	1.49	500.00	
235 U	# 3	159	461.1	0.0000	0.0064	ppb	8.89	30.00	
238 U	# 3	159	63998.1	0.0000	0.9909	ppb	1.28	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	642685.56	2.05	667111.13	96.3	60 - 125	
45 Sc # 1	1215160.50	2.18	1240412.40	98.0	60 - 125	
45 Sc # 2	265507.03	1.67	269182.69	98.6	60 - 125	
45 Sc # 3	2485942.00	1.54	2477756.30	100.3	60 - 125	
72 Ge # 1	369463.47	1.62	375477.53	98.4	60 - 125	
72 Ge # 2	162844.83	1.07	162224.16	100.4	60 - 125	
72 Ge # 3	656833.56	1.07	660227.75	99.5	60 - 125	
115 In # 3	5218299.50	1.54	5115350.00	102.0	60 - 125	
159 Tb # 3	7697752.50	0.89	7391125.50	104.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03017.D\F6E03017.D#
Date Acquired: May 3 2016 05:21 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 03 2016 04:45 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.28 ppb	3.53	25.00	90 - 110	
9 Be	25.27 ppb	5.07	25.00	90 - 110	
11 B	50.32 ppb	6.94	50.00	90 - 110	
23 Na	24940.00 ppb	0.32	25000.00	90 - 110	
24 Mg	24260.00 ppb	5.28	25000.00	90 - 110	
27 Al	23700.00 ppb	2.80	25000.00	90 - 110	
28 Si	2469.00 ppb	0.51	2500.00	90 - 110	
31 P	249.40 ppb	1.48	250.00	90 - 110	
39 K	24620.00 ppb	1.72	25000.00	90 - 110	
40 Ca	24490.00 ppb	0.92	25000.00	90 - 110	
47 Ti	251.40 ppb	2.05	250.00	90 - 110	
51 V	246.30 ppb	1.60	250.00	90 - 110	
52 Cr	242.40 ppb	1.55	250.00	90 - 110	
55 Mn	1487.00 ppb	4.36	1500.00	90 - 110	
56 Fe	24730.00 ppb	0.37	25000.00	90 - 110	
59 Co	250.40 ppb	5.60	250.00	90 - 110	
60 Ni	246.80 ppb	1.11	250.00	90 - 110	
63 Cu	241.80 ppb	1.35	250.00	90 - 110	
66 Zn	247.80 ppb	1.89	250.00	90 - 110	
75 As	250.50 ppb	0.55	250.00	90 - 110	
78 Se	250.40 ppb	0.50	250.00	90 - 110	
88 Sr	246.10 ppb	2.20	250.00	90 - 110	
90 Zr	25.18 ppb	2.50	25.00	90 - 110	
95 Mo	247.70 ppb	2.53	250.00	90 - 110	
107 Ag	24.35 ppb	2.81	25.00	90 - 110	
111 Cd	253.30 ppb	1.55	250.00	90 - 110	
118 Sn	253.80 ppb	1.23	250.00	90 - 110	
121 Sb	247.00 ppb	0.08	250.00	90 - 110	
137 Ba	504.20 ppb	0.88	500.00	90 - 110	
182 W	24.44 ppb	1.37	25.00	90 - 110	
205 Tl	248.80 ppb	2.76	250.00	90 - 110	
208 Pb	237.30 ppb	2.40	250.00	90 - 110	
235 U	1.67 ppb	1.59	1.80	90 - 110	
238 U	245.60 ppb	1.27	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	601377.81	3.10	667111.13	90.1	60 - 125	
45 Sc	1198848.90	1.46	1240412.40	96.6	60 - 125	
45 Sc	259847.73	0.75	269182.69	96.5	60 - 125	
45 Sc	2419008.50	3.42	2477756.30	97.6	60 - 125	
72 Ge	356577.41	0.16	375477.53	95.0	60 - 125	
72 Ge	152966.83	0.53	162224.16	94.3	60 - 125	
72 Ge	619064.19	0.94	660227.75	93.8	60 - 125	
115 In	4672192.50	1.78	5115350.00	91.3	60 - 125	
159 Tb	7204897.50	1.35	7391125.50	97.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03018.D\F6E03018.D#
Date Acquired:	May 3 2016 05:25 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1953	ppb	44313.6	94.57	0.20	
9 Be	-0.0017	ppb	17.8	208.49	0.10	
11 B	-0.6563	ppb	7504.4	17.46	5.00	
23 Na	-2.1120	ppb	64049.3	31.28	40.00	
24 Mg	0.4960	ppb	11718.6	55.93	10.00	
27 Al	0.2839	ppb	11893.2	59.32	20.00	
28 Si	0.9387	ppb	2128.0	17.80	20.00	
31 P	-0.8438	ppb	7800.5	42.79	10.00	
39 K	-4.1850	ppb	33171.4	11.83	20.00	
40 Ca	0.7733	ppb	38383.7	11.35	25.00	
47 Ti	-0.0091	ppb	58.9	69.37	0.50	
51 V	-0.0261	ppb	1517.9	37.75	0.50	
52 Cr	-0.0190	ppb	487.6	15.75	0.20	
55 Mn	0.0194	ppb	2162.5	49.10	0.20	
56 Fe	2.2830	ppb	34208.1	9.36	10.00	
59 Co	-0.0015	ppb	238.9	163.40	0.20	
60 Ni	0.0024	ppb	56.2	127.09	0.20	
63 Cu	0.3885	ppb	2975.2	2.50	0.40	
66 Zn	0.0691	ppb	1899.1	8.54	2.00	
75 As	0.0270	ppb	69.3	20.75	0.20	
78 Se	0.0589	ppb	32.7	22.72	0.20	
88 Sr	0.0004	ppb	658.9	325.25	0.20	
90 Zr	0.0074	ppb	352.2	17.30	2.00	
95 Mo	0.1225	ppb	999.0	7.85	0.40	
107 Ag	0.0011	ppb	36.7	51.66	0.20	
111 Cd	-0.0055	ppb	-3.2	93.50	0.20	
118 Sn	0.0372	ppb	686.7	7.07	0.20	
121 Sb	0.2506	ppb	4953.3	7.43	0.40	
137 Ba	0.0035	ppb	113.3	86.38	0.20	
182 W	0.0176	ppb	497.8	17.44	1.00	
205 Tl	0.0066	ppb	385.6	23.95	0.20	
208 Pb	0.0033	ppb	820.0	32.72	0.10	
235 U	0.0002	ppb	17.8	16.10	1.00	
238 U	0.0151	ppb	1064.5	21.10	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	635222.2	2.98	667111.13	95.2	60 - 125	
45 Sc	1244807.1	2.94	1240412.40	100.4	60 - 125	
45 Sc	268623.5	0.85	269182.69	99.8	60 - 125	
45 Sc	2486510.0	0.62	2477756.30	100.4	60 - 125	
72 Ge	377594.8	1.19	375477.53	100.6	60 - 125	
72 Ge	159591.8	0.35	162224.16	98.4	60 - 125	
72 Ge	651613.9	0.37	660227.75	98.7	60 - 125	
115 In	5145040.0	0.49	5115350.00	100.6	60 - 125	
159 Tb	7607428.0	1.13	7391125.50	102.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed

0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass

ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03019.D\F6E03019.D#
Date Acquired: May 3 2016 05:29 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: IME003SB
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: MBS
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.2883	ppb	42892.5	8.57	0.50	
9 Be	0.0028	ppb	30.0	109.24	0.50	
11 B	-0.5897	ppb	7293.2	34.00	10.00	
23 Na	3.5850	ppb	70348.6	25.18	100.00	
24 Mg	1.6470	ppb	21670.1	15.90	100.00	
27 Al	3.1320	ppb	47137.0	4.45	100.00	
28 Si	1.0070	ppb	1930.2	18.14	50.00	
31 P	5.6550	ppb	12115.6	7.65	10.00	
39 K	-0.7883	ppb	34622.5	104.88	100.00	
40 Ca	13.1000	ppb	110844.2	0.74	100.00	
47 Ti	0.0410	ppb	136.7	13.05	0.50	
51 V	0.0584	ppb	1897.7	7.77	0.50	
52 Cr	0.0528	ppb	890.3	9.69	0.50	
55 Mn	0.0821	ppb	3861.8	10.68	0.50	
56 Fe	4.6880	ppb	54630.6	3.08	100.00	
59 Co	-0.0030	ppb	200.0	7.64	0.50	
60 Ni	0.0459	ppb	141.6	10.46	0.50	
63 Cu	0.5061	ppb	3506.2	0.96	0.50	Fail
66 Zn	0.7066	ppb	4375.3	4.56	2.00	
75 As	0.0237	ppb	65.8	6.15	0.50	
78 Se	0.0474	ppb	24.0	21.28	0.50	
88 Sr	0.0185	ppb	1377.9	8.44	0.50	
90 Zr	0.0317	ppb	985.6	7.40	5.00	
95 Mo	0.1186	ppb	970.1	9.86	0.50	
107 Ag	0.0030	ppb	76.7	45.06	0.50	
111 Cd	-0.0015	ppb	15.8	54.54	0.50	
118 Sn	3.6200	ppb	47051.8	1.78	20.00	
121 Sb	0.0910	ppb	2100.2	5.40	0.50	
137 Ba	0.0487	ppb	424.5	8.01	0.50	
182 W	0.0225	ppb	597.8	5.95	2.00	
205 Tl	0.0058	ppb	361.1	16.75	0.50	
208 Pb	0.0117	ppb	1291.2	6.18	0.50	
235 U	0.0000	ppb	10.0	299.18	---	
238 U	0.0067	ppb	535.6	16.93	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	605705.8	0.36	667111.13	90.8	60 - 125	
45 Sc	1093039.0	3.71	1240412.40	88.1	60 - 125	
45 Sc	261847.9	1.18	269182.69	97.3	60 - 125	
45 Sc	2416586.8	1.10	2477756.30	97.5	60 - 125	
72 Ge	337579.4	4.08	375477.53	89.9	60 - 125	
72 Ge	158431.3	0.24	162224.16	97.7	60 - 125	
72 Ge	644265.6	0.39	660227.75	97.6	60 - 125	
115 In	5153827.0	0.72	5115350.00	100.8	60 - 125	
159 Tb	7662376.5	0.64	7391125.50	103.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03020.D\F6E03020.D#
Date Acquired: May 3 2016 05:33 pm
Operator: CCapul
Sample Name: IME003SL
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: LCSS
Final Dil Factor: 1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	290326.50	40.30	ppb	2.76	40.00	80 - 120	
9 Be	113321.20	41.71	ppb	1.75	40.00	80 - 120	
11 B	84517.24	40.27	ppb	2.07	40.00	80 - 120	
23 Na	8230051.00	4052.00	ppb	1.02	4000.00	80 - 120	
24 Mg	33610152.00	3799.00	ppb	0.97	4000.00	80 - 120	
27 Al	45653700.00	3695.00	ppb	1.61	4000.00	80 - 120	
28 Si	2466.66	2.26	ppb	14.24	4000.00	80 - 120	Fail
31 P	11279.21	4.65	ppb	9.10	400.00	80 - 120	Fail
39 K	2658581.00	4066.00	ppb	2.07	4000.00	80 - 120	
40 Ca	20459090.00	4012.00	ppb	1.41	4000.00	80 - 120	
47 Ti	62281.89	39.75	ppb	0.76	40.00	80 - 120	
51 V	194366.80	40.67	ppb	0.52	40.00	80 - 120	
52 Cr	226623.70	40.80	ppb	0.28	40.00	80 - 120	
55 Mn	1150978.00	41.37	ppb	1.35	40.00	80 - 120	
56 Fe	34378520.00	4129.00	ppb	0.61	4000.00	80 - 120	
59 Co	894658.69	42.91	ppb	0.82	40.00	80 - 120	
60 Ni	81011.02	42.29	ppb	1.01	40.00	80 - 120	
63 Cu	212769.91	42.90	ppb	0.88	40.00	80 - 120	
66 Zn	305431.09	79.68	ppb	1.35	80.00	80 - 120	
75 As	36107.23	39.69	ppb	0.93	40.00	80 - 120	
78 Se	14054.54	38.54	ppb	2.35	40.00	80 - 120	
88 Sr	1648133.00	42.14	ppb	0.34	40.00	80 - 120	
90 Zr	2156.91	0.08	ppb	4.12	30.00	80 - 120	Fail
95 Mo	293702.41	38.34	ppb	1.14	40.00	80 - 120	
107 Ag	805368.19	39.66	ppb	0.28	40.00	80 - 120	
111 Cd	185188.41	40.07	ppb	1.71	40.00	80 - 120	
118 Sn	574567.13	45.14	ppb	0.53	40.00	80 - 120	
121 Sb	706228.69	40.04	ppb	0.38	40.00	80 - 120	
137 Ba	271260.59	40.09	ppb	1.17	40.00	80 - 120	
182 W	607.81	0.02	ppb	16.04	40.00	80 - 120	Fail
205 Tl	1595639.00	41.32	ppb	0.66	40.00	80 - 120	
208 Pb	2213179.00	39.53	ppb	1.13	40.00	80 - 120	
235 U	18962.38	0.27	ppb	2.59	0.28	80 - 120	
238 U	2594779.00	39.99	ppb	1.29	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	572632.31	1.50	667111.13	85.8	60 - 125	
45 Sc	890276.31	10.32	1240412.40	71.8	60 - 125	
45 Sc	250893.44	0.64	269182.69	93.2	60 - 125	
45 Sc	2388585.00	1.13	2477756.30	96.4	60 - 125	
72 Ge	279299.38	8.76	375477.53	74.4	60 - 125	
72 Ge	152662.13	1.23	162224.16	94.1	60 - 125	
72 Ge	627150.31	0.68	660227.75	95.0	60 - 125	
115 In	5067345.00	0.67	5115350.00	99.1	60 - 125	
159 Tb	7746883.00	1.31	7391125.50	104.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03021.D\F6E03021.D#
Date Acquired: May 3 2016 05:38 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-01M
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	451080.3	0.0000	67.3100	ppb	0.99	50.00	>LRS
9 Be	# 3	6	119692.0	0.0000	44.8300	ppb	0.34	50.00	
11 B	# 3	6	95815.9	0.0000	47.1000	ppb	0.79	100.00	
23 Na	# 1	45	10656970.0	0.0000	3835.0000	ppb	0.78	50000.00	
24 Mg	# 3	45	80664192.0	0.0000	8445.0000	ppb	2.01	50000.00	
27 Al	# 3	45	474547580.0	0.0000	35580.0000	ppb	0.73	50000.00	
28 Si	# 1	45	3130298.0	0.0000	3195.0000	ppb	1.10	5000.00	
31 P	# 3	45	184761.5	0.0000	236.5000	ppb	0.87	500.00	
39 K	# 2	45	6374748.0	0.0000	8996.0000	ppb	0.90	50000.00	
40 Ca	# 1	45	57680272.0	0.0000	8274.0000	ppb	0.98	50000.00	
47 Ti	# 3	45	860839.9	0.0000	509.3000	ppb	0.70	500.00	>LRS
51 V	# 2	45	456748.3	0.0000	87.9400	ppb	0.55	500.00	
52 Cr	# 2	45	407045.7	0.0000	67.2000	ppb	0.50	500.00	
55 Mn	# 3	45	14219560.0	0.0000	473.9000	ppb	1.44	3000.00	
56 Fe	# 1	45	357697700.0	0.0000	31430.0000	ppb	0.20	50000.00	
59 Co	# 3	45	1128111.0	0.0000	50.1000	ppb	1.54	500.00	
60 Ni	# 2	45	135790.8	0.0000	64.9600	ppb	1.08	500.00	
63 Cu	# 2	45	316942.3	0.0000	58.6000	ppb	0.29	500.00	
66 Zn	# 3	72	556436.3	0.0000	142.3000	ppb	0.62	500.00	
75 As	# 2	72	43000.2	0.0000	46.0400	ppb	0.61	500.00	
78 Se	# 1	72	18169.3	0.0000	39.6200	ppb	0.76	500.00	
88 Sr	# 3	72	3585634.0	0.0000	89.6900	ppb	1.32	500.00	
90 Zr	# 3	72	292961.7	0.0000	11.2200	ppb	0.99	50.00	
95 Mo	# 3	115	279313.3	0.0000	37.5200	ppb	1.02	500.00	
107 Ag	# 3	115	785935.5	0.0000	39.8200	ppb	0.75	50.00	
111 Cd	# 3	115	186554.1	0.0000	41.5300	ppb	1.15	500.00	
118 Sn	# 3	115	572290.5	0.0000	46.2600	ppb	0.55	500.00	
121 Sb	# 3	115	439123.5	0.0000	25.6100	ppb	0.39	500.00	
137 Ba	# 3	115	1651077.0	0.0000	251.1000	ppb	0.95	1000.00	
182 W	# 3	159	2933.8	0.0000	0.1470	ppb	4.32	50.00	
205 Tl	# 3	159	1522479.0	0.0000	41.0800	ppb	0.81	500.00	
208 Pb	# 3	159	3046775.0	0.0000	56.7000	ppb	1.63	500.00	
235 U	# 3	159	18371.5	0.0000	0.2698	ppb	3.39	30.00	
238 U	# 3	159	2524229.0	0.0000	40.5300	ppb	1.08	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	562730.56	0.62	667111.13	84.4	60 - 125	
45 Sc # 1	1216765.10	0.85	1240412.40	98.1	60 - 125	
45 Sc # 2	273857.03	0.70	269182.69	101.7	60 - 125	
45 Sc # 3	2579382.30	0.99	2477756.30	104.1	60 - 125	
72 Ge # 1	351621.84	0.58	375477.53	93.6	60 - 125	
72 Ge # 2	156732.94	0.52	162224.16	96.6	60 - 125	
72 Ge # 3	641151.81	0.34	660227.75	97.1	60 - 125	
115 In # 3	4925169.50	0.94	5115350.00	96.3	60 - 125	
159 Tb # 3	7435475.50	0.92	7391125.50	100.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

2 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03022.D\F6E03022.D#
Date Acquired: May 3 2016 05:42 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-01A
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	400609.4	0.0000	60.6000	ppb	1.01	50.00	>LRS
9 Be	# 3	6	118896.3	0.0000	45.5600	ppb	1.47	50.00	
11 B	# 3	6	96670.2	0.0000	48.7600	ppb	1.52	100.00	
23 Na	# 1	45	10817870.0	0.0000	3884.0000	ppb	0.95	50000.00	
24 Mg	# 3	45	70307920.0	0.0000	7575.0000	ppb	1.37	50000.00	
27 Al	# 3	45	345390690.0	0.0000	26650.0000	ppb	1.35	50000.00	
28 Si	# 1	45	2009082.0	0.0000	2045.0000	ppb	0.83	5000.00	
31 P	# 3	45	144989.8	0.0000	188.8000	ppb	0.69	500.00	
39 K	# 2	45	5594454.0	0.0000	7954.0000	ppb	1.31	50000.00	
40 Ca	# 1	45	53237760.0	0.0000	7619.0000	ppb	0.90	50000.00	
47 Ti	# 3	45	744072.2	0.0000	453.1000	ppb	0.23	500.00	
51 V	# 2	45	421115.7	0.0000	81.7300	ppb	0.85	500.00	
52 Cr	# 2	45	372540.9	0.0000	62.0100	ppb	0.20	500.00	
55 Mn	# 3	45	12344640.0	0.0000	423.4000	ppb	0.37	3000.00	
56 Fe	# 1	45	307487390.0	0.0000	26950.0000	ppb	0.71	50000.00	
59 Co	# 3	45	1101325.0	0.0000	50.3400	ppb	1.19	500.00	
60 Ni	# 2	45	127583.8	0.0000	61.5400	ppb	1.06	500.00	
63 Cu	# 2	45	303060.1	0.0000	56.5000	ppb	1.20	500.00	
66 Zn	# 3	72	500998.7	0.0000	130.4000	ppb	0.08	500.00	
75 As	# 2	72	43959.0	0.0000	46.8300	ppb	0.68	500.00	
78 Se	# 1	72	19037.3	0.0000	40.6900	ppb	0.65	500.00	
88 Sr	# 3	72	3169318.0	0.0000	80.7200	ppb	0.60	500.00	
90 Zr	# 3	72	212368.0	0.0000	8.2800	ppb	1.43	50.00	
95 Mo	# 3	115	298097.2	0.0000	40.6200	ppb	2.50	500.00	
107 Ag	# 3	115	759167.2	0.0000	39.0100	ppb	2.79	50.00	
111 Cd	# 3	115	185360.5	0.0000	41.8500	ppb	1.30	500.00	
118 Sn	# 3	115	568997.5	0.0000	46.6500	ppb	1.18	500.00	
121 Sb	# 3	115	709062.3	0.0000	41.9600	ppb	1.93	500.00	
137 Ba	# 3	115	1280109.0	0.0000	197.5000	ppb	2.17	1000.00	
182 W	# 3	159	2391.4	0.0000	0.1190	ppb	5.44	50.00	
205 Tl	# 3	159	1539507.0	0.0000	41.7500	ppb	1.19	500.00	
208 Pb	# 3	159	2901233.0	0.0000	54.2700	ppb	0.64	500.00	
235 U	# 3	159	18212.3	0.0000	0.2689	ppb	3.00	30.00	
238 U	# 3	159	2537149.0	0.0000	40.9500	ppb	1.37	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	550024.19	1.72	667111.13	82.4	60 - 125	
45 Sc # 1	1219717.90	2.68	1240412.40	98.3	60 - 125	
45 Sc # 2	271604.81	0.59	269182.69	100.9	60 - 125	
45 Sc # 3	2505954.00	0.35	2477756.30	101.1	60 - 125	
72 Ge # 1	358704.00	1.40	375477.53	95.5	60 - 125	
72 Ge # 2	157564.81	1.25	162224.16	97.1	60 - 125	
72 Ge # 3	629671.81	0.67	660227.75	95.4	60 - 125	
115 In # 3	4856456.00	1.79	5115350.00	94.9	60 - 125	
159 Tb # 3	7396948.00	0.62	7391125.50	100.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03023.D\F6E03023.D#
Date Acquired: May 3 2016 05:46 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-01
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	154707.0	0.0000	18.4700	ppb	1.05	50.00	
9 Be	# 3	6	3878.4	0.0000	1.4140	ppb	2.22	50.00	
11 B	# 3	6	19020.6	0.0000	5.7520	ppb	5.20	100.00	
23 Na	# 1	45	240201.0	0.0000	63.6800	ppb	2.37	50000.00	
24 Mg	# 3	45	36470472.0	0.0000	3793.0000	ppb	1.03	50000.00	
27 Al	# 3	45	303097790.0	0.0000	22580.0000	ppb	0.68	50000.00	
28 Si	# 1	45	1945121.0	0.0000	2018.0000	ppb	1.40	5000.00	
31 P	# 3	45	148117.3	0.0000	186.0000	ppb	0.83	500.00	
39 K	# 2	45	2924504.0	0.0000	4046.0000	ppb	0.57	50000.00	
40 Ca	# 1	45	25751870.0	0.0000	3753.0000	ppb	0.36	50000.00	
47 Ti	# 3	45	702385.3	0.0000	412.9000	ppb	1.17	500.00	
51 V	# 2	45	223277.0	0.0000	42.2800	ppb	0.25	500.00	
52 Cr	# 2	45	143067.9	0.0000	23.2500	ppb	0.19	500.00	
55 Mn	# 3	45	11595080.0	0.0000	383.9000	ppb	0.93	3000.00	
56 Fe	# 1	45	254393300.0	0.0000	22720.0000	ppb	0.46	50000.00	
59 Co	# 3	45	215262.4	0.0000	9.4900	ppb	0.93	500.00	
60 Ni	# 2	45	46251.9	0.0000	21.8300	ppb	0.46	500.00	
63 Cu	# 2	45	94237.5	0.0000	17.0800	ppb	0.69	500.00	
66 Zn	# 3	72	208662.8	0.0000	51.7700	ppb	0.49	500.00	
75 As	# 2	72	6657.1	0.0000	6.8490	ppb	2.00	500.00	
78 Se	# 1	72	124.0	0.0000	0.2635	ppb	12.76	500.00	
88 Sr	# 3	72	1597225.0	0.0000	38.9400	ppb	0.30	500.00	
90 Zr	# 3	72	204327.4	0.0000	7.6270	ppb	0.64	50.00	
95 Mo	# 3	115	5494.6	0.0000	0.7080	ppb	5.41	500.00	
107 Ag	# 3	115	2131.4	0.0000	0.1037	ppb	4.92	50.00	
111 Cd	# 3	115	1870.6	0.0000	0.3979	ppb	4.05	500.00	
118 Sn	# 3	115	53471.3	0.0000	4.1650	ppb	1.25	500.00	
121 Sb	# 3	115	8830.9	0.0000	0.4723	ppb	3.69	500.00	
137 Ba	# 3	115	1039981.0	0.0000	152.9000	ppb	1.59	1000.00	
182 W	# 3	159	2268.1	0.0000	0.1091	ppb	7.26	50.00	
205 Tl	# 3	159	12404.1	0.0000	0.3234	ppb	1.19	500.00	
208 Pb	# 3	159	838846.0	0.0000	15.2400	ppb	1.20	500.00	
235 U	# 3	159	262.2	0.0000	0.0037	ppb	3.12	30.00	
238 U	# 3	159	36363.3	0.0000	0.5690	ppb	4.15	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	575091.50	1.74	667111.13	86.2	60 - 125	
45 Sc # 1	1196886.80	4.40	1240412.40	96.5	60 - 125	
45 Sc # 2	277357.91	0.35	269182.69	103.0	60 - 125	
45 Sc # 3	2595707.80	0.43	2477756.30	104.8	60 - 125	
72 Ge # 1	350495.97	2.07	375477.53	93.3	60 - 125	
72 Ge # 2	162192.08	0.21	162224.16	100.0	60 - 125	
72 Ge # 3	657576.69	0.29	660227.75	99.6	60 - 125	
115 In # 3	5094733.00	1.76	5115350.00	99.6	60 - 125	
159 Tb # 3	7610054.00	1.15	7391125.50	103.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03024.D\F6E03024.D#
Date Acquired: May 3 2016 05:50 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-01J
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	64458.5	0.0000	3.8680	ppb	0.62	50.00	
9 Be	# 3	6	860.1	0.0000	0.3013	ppb	1.77	50.00	
11 B	# 3	6	9028.6	0.0000	0.4182	ppb	26.26	100.00	
23 Na	# 1	45	101589.1	0.0000	15.2500	ppb	10.97	50000.00	
24 Mg	# 3	45	7601121.0	0.0000	820.0000	ppb	0.97	50000.00	
27 Al	# 3	45	62610528.0	0.0000	4841.0000	ppb	0.74	50000.00	
28 Si	# 1	45	398823.9	0.0000	441.3000	ppb	2.24	5000.00	
31 P	# 3	45	36760.4	0.0000	39.2200	ppb	3.30	500.00	
39 K	# 2	45	644348.9	0.0000	876.4000	ppb	0.82	50000.00	
40 Ca	# 1	45	5238626.0	0.0000	812.9000	ppb	2.25	50000.00	
47 Ti	# 3	45	143097.2	0.0000	87.2800	ppb	0.69	500.00	
51 V	# 2	45	47139.5	0.0000	8.9240	ppb	0.96	500.00	
52 Cr	# 2	45	30070.4	0.0000	4.9470	ppb	0.92	500.00	
55 Mn	# 3	45	2435347.0	0.0000	83.6600	ppb	0.66	3000.00	
56 Fe	# 1	45	51151380.0	0.0000	4884.0000	ppb	1.00	50000.00	
59 Co	# 3	45	45476.0	0.0000	2.0710	ppb	1.89	500.00	
60 Ni	# 2	45	9959.7	0.0000	4.8150	ppb	1.19	500.00	
63 Cu	# 2	45	22990.3	0.0000	4.1550	ppb	1.19	500.00	
66 Zn	# 3	72	48758.8	0.0000	11.5700	ppb	1.79	500.00	
75 As	# 2	72	1445.2	0.0000	1.4170	ppb	5.55	500.00	
78 Se	# 1	72	31.6	0.0000	0.0613	ppb	13.73	500.00	
88 Sr	# 3	72	332794.5	0.0000	7.9610	ppb	0.69	500.00	
90 Zr	# 3	72	41607.2	0.0000	1.5220	ppb	3.27	50.00	
95 Mo	# 3	115	1251.2	0.0000	0.1536	ppb	5.35	500.00	
107 Ag	# 3	115	466.7	0.0000	0.0218	ppb	2.08	50.00	
111 Cd	# 3	115	456.1	0.0000	0.0915	ppb	6.37	500.00	
118 Sn	# 3	115	11038.1	0.0000	0.8315	ppb	2.20	500.00	
121 Sb	# 3	115	2570.3	0.0000	0.1162	ppb	7.80	500.00	
137 Ba	# 3	115	219396.8	0.0000	31.6700	ppb	1.49	1000.00	
182 W	# 3	159	601.1	0.0000	0.0227	ppb	4.26	50.00	
205 Tl	# 3	159	2740.4	0.0000	0.0681	ppb	3.97	500.00	
208 Pb	# 3	159	174944.7	0.0000	3.1490	ppb	2.61	500.00	
235 U	# 3	159	45.6	0.0000	0.0006	ppb	10.58	30.00	
238 U	# 3	159	7719.2	0.0000	0.1187	ppb	5.55	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	586781.81	1.44	667111.13	88.0	60 - 125	
45 Sc # 1	1119692.10	5.51	1240412.40	90.3	60 - 125	
45 Sc # 2	269730.50	1.27	269182.69	100.2	60 - 125	
45 Sc # 3	2500598.50	0.24	2477756.30	100.9	60 - 125	
72 Ge # 1	353222.47	3.69	375477.53	94.1	60 - 125	
72 Ge # 2	165996.28	0.25	162224.16	102.3	60 - 125	
72 Ge # 3	669174.88	0.35	660227.75	101.4	60 - 125	
115 In # 3	5188052.00	0.96	5115350.00	101.4	60 - 125	
159 Tb # 3	7662486.50	2.38	7391125.50	103.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03025.D\F6E03025.D#
Date Acquired: May 3 2016 05:55 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-01D
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	172128.8	0.0000	22.2900	ppb	1.59	50.00	
9 Be	# 3	6	4356.3	0.0000	1.6500	ppb	1.97	50.00	
11 B	# 3	6	20051.9	0.0000	6.6920	ppb	2.14	100.00	
23 Na	# 1	45	264475.3	0.0000	77.4100	ppb	4.19	50000.00	
24 Mg	# 3	45	42537900.0	0.0000	4571.0000	ppb	1.14	50000.00	
27 Al	# 3	45	357395810.0	0.0000	27510.0000	ppb	1.05	50000.00	
28 Si	# 1	45	2225768.0	0.0000	2423.0000	ppb	1.80	5000.00	
31 P	# 3	45	169761.1	0.0000	222.4000	ppb	0.58	500.00	
39 K	# 2	45	3377726.0	0.0000	4794.0000	ppb	0.74	50000.00	
40 Ca	# 1	45	28915550.0	0.0000	4422.0000	ppb	0.40	50000.00	
47 Ti	# 3	45	701777.8	0.0000	426.2000	ppb	0.25	500.00	
51 V	# 2	45	258017.3	0.0000	50.0800	ppb	1.08	500.00	
52 Cr	# 2	45	166568.1	0.0000	27.7400	ppb	0.44	500.00	
55 Mn	# 3	45	12893400.0	0.0000	441.1000	ppb	0.90	3000.00	
56 Fe	# 1	45	289486110.0	0.0000	27130.0000	ppb	1.70	50000.00	
59 Co	# 3	45	245988.3	0.0000	11.2100	ppb	1.46	500.00	
60 Ni	# 2	45	54014.5	0.0000	26.1100	ppb	0.90	500.00	
63 Cu	# 2	45	110446.9	0.0000	20.5300	ppb	0.20	500.00	
66 Zn	# 3	72	247636.2	0.0000	63.0600	ppb	1.33	500.00	
75 As	# 2	72	7653.2	0.0000	8.0040	ppb	0.63	500.00	
78 Se	# 1	72	133.1	0.0000	0.2951	ppb	10.65	500.00	
88 Sr	# 3	72	1887237.0	0.0000	47.1600	ppb	0.52	500.00	
90 Zr	# 3	72	209029.0	0.0000	7.9980	ppb	1.62	50.00	
95 Mo	# 3	115	6043.7	0.0000	0.7978	ppb	2.02	500.00	
107 Ag	# 3	115	2110.2	0.0000	0.1052	ppb	4.67	50.00	
111 Cd	# 3	115	2264.8	0.0000	0.4944	ppb	3.77	500.00	
118 Sn	# 3	115	54171.0	0.0000	4.3210	ppb	0.55	500.00	
121 Sb	# 3	115	8486.2	0.0000	0.4643	ppb	2.57	500.00	
137 Ba	# 3	115	1393486.0	0.0000	209.8000	ppb	1.04	1000.00	
182 W	# 3	159	2309.2	0.0000	0.1138	ppb	3.39	50.00	
205 Tl	# 3	159	14293.8	0.0000	0.3815	ppb	3.42	500.00	
208 Pb	# 3	159	993081.5	0.0000	18.4400	ppb	2.09	500.00	
235 U	# 3	159	313.4	0.0000	0.0045	ppb	17.74	30.00	
238 U	# 3	159	42931.2	0.0000	0.6867	ppb	2.70	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	553895.13	0.28	667111.13	83.0	60 - 125	
45 Sc # 1	1140964.00	4.70	1240412.40	92.0	60 - 125	
45 Sc # 2	270893.03	0.76	269182.69	100.6	60 - 125	
45 Sc # 3	2512517.50	0.75	2477756.30	101.4	60 - 125	
72 Ge # 1	337689.50	2.75	375477.53	89.9	60 - 125	
72 Ge # 2	159714.59	0.14	162224.16	98.5	60 - 125	
72 Ge # 3	641659.44	1.30	660227.75	97.2	60 - 125	
115 In # 3	4974576.50	0.64	5115350.00	97.2	60 - 125	
159 Tb # 3	7448508.00	2.00	7391125.50	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03026.D\F6E03026.D#
Date Acquired: May 3 2016 05:59 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-02
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	195237.5	0.0000	27.7200	ppb	1.71	50.00	
9 Be	# 3	6	4825.4	0.0000	1.9190	ppb	1.10	50.00	
11 B	# 3	6	23590.5	0.0000	9.2510	ppb	2.68	100.00	
23 Na	# 1	45	239326.7	0.0000	67.4500	ppb	1.35	50000.00	
24 Mg	# 3	45	43166280.0	0.0000	4761.0000	ppb	1.01	50000.00	
27 Al	# 3	45	412161310.0	0.0000	32560.0000	ppb	0.98	50000.00	
28 Si	# 1	45	2042085.0	0.0000	2217.0000	ppb	0.95	5000.00	
31 P	# 3	45	239087.5	0.0000	326.7000	ppb	0.74	500.00	
39 K	# 2	45	3933124.0	0.0000	5734.0000	ppb	0.59	50000.00	
40 Ca	# 1	45	36130840.0	0.0000	5513.0000	ppb	0.71	50000.00	
47 Ti	# 3	45	771683.7	0.0000	481.0000	ppb	1.36	500.00	
51 V	# 2	45	312750.6	0.0000	62.3200	ppb	1.48	500.00	
52 Cr	# 2	45	184528.1	0.0000	31.5200	ppb	0.55	500.00	
55 Mn	# 3	45	13155200.0	0.0000	461.9000	ppb	1.52	3000.00	
56 Fe	# 1	45	333038910.0	0.0000	31140.0000	ppb	0.44	50000.00	
59 Co	# 3	45	252532.1	0.0000	11.8100	ppb	1.08	500.00	
60 Ni	# 2	45	52568.7	0.0000	26.0500	ppb	0.67	500.00	
63 Cu	# 2	45	124458.8	0.0000	23.7500	ppb	0.80	500.00	
66 Zn	# 3	72	277208.9	0.0000	73.9300	ppb	0.46	500.00	
75 As	# 2	72	9468.3	0.0000	10.2500	ppb	0.37	500.00	
78 Se	# 1	72	268.2	0.0000	0.6114	ppb	4.62	500.00	
88 Sr	# 3	72	1799990.0	0.0000	47.0700	ppb	1.10	500.00	
90 Zr	# 3	72	246217.0	0.0000	9.8580	ppb	1.03	50.00	
95 Mo	# 3	115	6328.3	0.0000	0.8700	ppb	3.62	500.00	
107 Ag	# 3	115	3450.6	0.0000	0.1795	ppb	3.52	50.00	
111 Cd	# 3	115	2651.7	0.0000	0.6034	ppb	3.04	500.00	
118 Sn	# 3	115	55877.8	0.0000	4.6400	ppb	1.69	500.00	
121 Sb	# 3	115	9770.4	0.0000	0.5614	ppb	1.26	500.00	
137 Ba	# 3	115	1502627.0	0.0000	235.5000	ppb	1.32	1000.00	
182 W	# 3	159	2770.4	0.0000	0.1404	ppb	1.35	50.00	
205 Tl	# 3	159	16706.8	0.0000	0.4535	ppb	2.17	500.00	
208 Pb	# 3	159	1172545.0	0.0000	22.1200	ppb	0.62	500.00	
235 U	# 3	159	383.4	0.0000	0.0056	ppb	10.08	30.00	
238 U	# 3	159	53182.9	0.0000	0.8643	ppb	2.13	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	527915.75	1.68	667111.13	79.1	60 - 125	
45 Sc # 1	1143496.50	2.65	1240412.40	92.2	60 - 125	
45 Sc # 2	264234.06	0.95	269182.69	98.2	60 - 125	
45 Sc # 3	2447962.50	0.78	2477756.30	98.8	60 - 125	
72 Ge # 1	332303.47	2.43	375477.53	88.5	60 - 125	
72 Ge # 2	154536.36	0.66	162224.16	95.3	60 - 125	
72 Ge # 3	613210.13	0.85	660227.75	92.9	60 - 125	
115 In # 3	4780636.50	1.27	5115350.00	93.5	60 - 125	
159 Tb # 3	7333399.00	0.69	7391125.50	99.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03027.D\F6E03027.D#
Date Acquired: May 3 2016 06:03 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-03
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	119157.8	0.0000	19.1600	ppb	1.69	50.00	
9 Be	# 3	6	2266.9	0.0000	1.1010	ppb	3.56	50.00	
11 B	# 3	6	18820.3	0.0000	8.9470	ppb	3.69	100.00	
23 Na	# 1	45	817966.0	0.0000	354.6000	ppb	1.73	50000.00	
24 Mg	# 3	45	45900712.0	0.0000	6235.0000	ppb	0.80	50000.00	
27 Al	# 3	45	184746700.0	0.0000	17970.0000	ppb	0.62	50000.00	
28 Si	# 1	45	2305913.0	0.0000	3014.0000	ppb	0.95	5000.00	
31 P	# 3	45	125111.6	0.0000	206.4000	ppb	0.59	500.00	
39 K	# 2	45	1901193.0	0.0000	3357.0000	ppb	1.62	50000.00	
40 Ca	# 1	45	1057394000.0	0.0000	194400.0000	ppb	1.59	50000.00	>LRS
47 Ti	# 3	45	413149.7	0.0000	317.2000	ppb	1.12	500.00	
51 V	# 2	45	225116.3	0.0000	54.6300	ppb	1.91	500.00	
52 Cr	# 2	45	91114.7	0.0000	18.9300	ppb	1.41	500.00	
55 Mn	# 3	45	4387967.0	0.0000	189.7000	ppb	2.14	3000.00	
56 Fe	# 1	45	152348990.0	0.0000	17140.0000	ppb	0.44	50000.00	
59 Co	# 3	45	127782.9	0.0000	7.3540	ppb	2.21	500.00	
60 Ni	# 2	45	32010.5	0.0000	19.3300	ppb	2.52	500.00	
63 Cu	# 2	45	44090.5	0.0000	10.1600	ppb	1.99	500.00	
66 Zn	# 3	72	120008.4	0.0000	37.6900	ppb	1.02	500.00	
75 As	# 2	72	5794.8	0.0000	7.4440	ppb	1.91	500.00	
78 Se	# 1	72	70.2	0.0000	0.1802	ppb	2.32	500.00	
88 Sr	# 3	72	9015379.0	0.0000	279.2000	ppb	1.39	500.00	
90 Zr	# 3	72	213044.6	0.0000	10.1000	ppb	2.88	50.00	
95 Mo	# 3	115	4159.7	0.0000	0.6313	ppb	2.50	500.00	
107 Ag	# 3	115	698.9	0.0000	0.0397	ppb	7.40	50.00	
111 Cd	# 3	115	1608.8	0.0000	0.4036	ppb	2.34	500.00	
118 Sn	# 3	115	36298.2	0.0000	3.3320	ppb	2.00	500.00	
121 Sb	# 3	115	6361.7	0.0000	0.3973	ppb	1.63	500.00	
137 Ba	# 3	115	3364488.0	0.0000	583.6000	ppb	0.93	1000.00	
182 W	# 3	159	1823.5	0.0000	0.0984	ppb	3.66	50.00	
205 Tl	# 3	159	9146.8	0.0000	0.2692	ppb	1.96	500.00	
208 Pb	# 3	159	562533.4	0.0000	11.5600	ppb	1.96	500.00	
235 U	# 3	159	440.0	0.0000	0.0071	ppb	8.01	30.00	
238 U	# 3	159	56121.7	0.0000	0.9945	ppb	3.20	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	430842.69	0.29	667111.13	64.6	60 - 125	
45 Sc # 1	949860.19	2.92	1240412.40	76.6	60 - 125	
45 Sc # 2	216824.27	2.07	269182.69	80.5	60 - 125	
45 Sc # 3	1987747.90	1.09	2477756.30	80.2	60 - 125	
72 Ge # 1	286875.53	4.48	375477.53	76.4	60 - 125	
72 Ge # 2	129985.20	0.71	162224.16	80.1	60 - 125	
72 Ge # 3	518021.97	1.33	660227.75	78.5	60 - 125	
115 In # 3	4318763.50	1.04	5115350.00	84.4	60 - 125	
159 Tb # 3	6727930.50	1.12	7391125.50	91.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03028.D\F6E03028.D#
Date Acquired: May 3 2016 06:07 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: BLANK
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	36865.4	0.0000	0.2685	ppb	22.20	50.00	
9 Be	# 3	6	16.7	0.0000	-0.0009	ppb	240.51	50.00	
11 B	# 3	6	6169.3	0.0000	-0.6571	ppb	25.69	100.00	
23 Na	# 1	45	60843.8	0.0000	-0.6554	ppb	52.58	50000.00	
24 Mg	# 3	45	7851.3	0.0000	0.1760	ppb	6.74	50000.00	
27 Al	# 3	45	10809.9	0.0000	0.2978	ppb	4.08	50000.00	
28 Si	# 1	45	2958.2	0.0000	2.1200	ppb	9.08	5000.00	
31 P	# 3	45	7305.6	0.0000	-0.3537	ppb	108.71	500.00	
39 K	# 2	45	30347.6	0.0000	-3.8210	ppb	14.85	50000.00	
40 Ca	# 1	45	82871.4	0.0000	8.4230	ppb	6.04	50000.00	
47 Ti	# 3	45	80.0	0.0000	0.0095	ppb	86.08	500.00	
51 V	# 2	45	1660.8	0.0000	0.0352	ppb	9.00	500.00	
52 Cr	# 2	45	450.5	0.0000	-0.0175	ppb	12.85	500.00	
55 Mn	# 3	45	1700.2	0.0000	0.0103	ppb	11.83	3000.00	
56 Fe	# 1	45	28468.7	0.0000	2.0830	ppb	4.58	50000.00	
59 Co	# 3	45	108.9	0.0000	-0.0069	ppb	1.57	500.00	
60 Ni	# 2	45	53.8	0.0000	0.0039	ppb	186.82	500.00	
63 Cu	# 2	45	1798.3	0.0000	0.2005	ppb	0.54	500.00	
66 Zn	# 3	72	1838.0	0.0000	0.0848	ppb	17.55	500.00	
75 As	# 2	72	48.7	0.0000	0.0071	ppb	77.50	500.00	
78 Se	# 1	72	4.7	0.0000	0.0027	ppb	166.02	500.00	
88 Sr	# 3	72	836.7	0.0000	0.0061	ppb	17.13	500.00	
90 Zr	# 3	72	2791.5	0.0000	0.1064	ppb	5.87	50.00	
95 Mo	# 3	115	97.8	0.0000	0.0069	ppb	41.17	500.00	
107 Ag	# 3	115	35.6	0.0000	0.0011	ppb	83.85	50.00	
111 Cd	# 3	115	24.2	0.0000	0.0004	ppb	984.39	500.00	
118 Sn	# 3	115	218.9	0.0000	0.0015	ppb	106.36	500.00	
121 Sb	# 3	115	846.7	0.0000	0.0225	ppb	11.92	500.00	
137 Ba	# 3	115	212.2	0.0000	0.0188	ppb	27.11	1000.00	
182 W	# 3	159	201.1	0.0000	0.0025	ppb	20.61	50.00	
205 Tl	# 3	159	131.1	0.0000	-0.0001	ppb	1305.30	500.00	
208 Pb	# 3	159	788.9	0.0000	0.0031	ppb	20.66	500.00	
235 U	# 3	159	7.8	0.0000	0.0000	ppb	141.84	30.00	
238 U	# 3	159	162.2	0.0000	0.0009	ppb	23.18	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	522149.38	1.00	667111.13	78.3	60 - 125	
45 Sc # 1	1110702.60	1.83	1240412.40	89.5	60 - 125	
45 Sc # 2	243881.77	1.06	269182.69	90.6	60 - 125	
45 Sc # 3	2228135.50	0.20	2477756.30	89.9	60 - 125	
72 Ge # 1	356254.75	1.05	375477.53	94.9	60 - 125	
72 Ge # 2	153744.33	1.32	162224.16	94.8	60 - 125	
72 Ge # 3	610585.56	0.99	660227.75	92.5	60 - 125	
115 In # 3	5001215.00	0.93	5115350.00	97.8	60 - 125	
159 Tb # 3	7425195.00	0.87	7391125.50	100.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03029.D\F6E03029.D#
Date Acquired: May 3 2016 06:12 pm
Operator: CCapul
Sample Name: CCV2
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 03 2016 04:45 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.55 ppb	0.79	25.00	90 - 110	
9 Be	27.37 ppb	0.94	25.00	90 - 110	
11 B	53.49 ppb	2.16	50.00	90 - 110	
23 Na	23850.00 ppb	1.42	25000.00	90 - 110	
24 Mg	23110.00 ppb	1.81	25000.00	90 - 110	
27 Al	22640.00 ppb	1.35	25000.00	90 - 110	
28 Si	2430.00 ppb	1.86	2500.00	90 - 110	
31 P	241.00 ppb	1.57	250.00	90 - 110	
39 K	24620.00 ppb	0.55	25000.00	90 - 110	
40 Ca	24150.00 ppb	0.38	25000.00	90 - 110	
47 Ti	250.20 ppb	0.50	250.00	90 - 110	
51 V	253.50 ppb	0.17	250.00	90 - 110	
52 Cr	247.90 ppb	0.51	250.00	90 - 110	
55 Mn	1499.00 ppb	0.45	1500.00	90 - 110	
56 Fe	25050.00 ppb	0.82	25000.00	90 - 110	
59 Co	257.50 ppb	0.62	250.00	90 - 110	
60 Ni	257.80 ppb	0.22	250.00	90 - 110	
63 Cu	250.90 ppb	0.63	250.00	90 - 110	
66 Zn	246.40 ppb	0.42	250.00	90 - 110	
75 As	251.90 ppb	0.64	250.00	90 - 110	
78 Se	255.10 ppb	0.26	250.00	90 - 110	
88 Sr	249.00 ppb	0.92	250.00	90 - 110	
90 Zr	25.33 ppb	1.86	25.00	90 - 110	
95 Mo	245.40 ppb	0.60	250.00	90 - 110	
107 Ag	24.58 ppb	0.71	25.00	90 - 110	
111 Cd	252.80 ppb	0.26	250.00	90 - 110	
118 Sn	255.20 ppb	0.53	250.00	90 - 110	
121 Sb	245.60 ppb	0.06	250.00	90 - 110	
137 Ba	504.50 ppb	1.28	500.00	90 - 110	
182 W	25.11 ppb	1.43	25.00	90 - 110	
205 Tl	256.40 ppb	1.46	250.00	90 - 110	
208 Pb	245.80 ppb	1.98	250.00	90 - 110	
235 U	1.73 ppb	2.46	1.80	90 - 110	
238 U	253.60 ppb	1.69	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	484078.63	0.96	667111.13	72.6	60 - 125	
45 Sc	1011489.70	2.27	1240412.40	81.5	60 - 125	
45 Sc	222294.53	0.60	269182.69	82.6	60 - 125	
45 Sc	2124263.00	1.11	2477756.30	85.7	60 - 125	
72 Ge	308379.56	2.38	375477.53	82.1	60 - 125	
72 Ge	137068.69	0.36	162224.16	84.5	60 - 125	
72 Ge	569706.63	0.79	660227.75	86.3	60 - 125	
115 In	4398647.50	0.32	5115350.00	86.0	60 - 125	
159 Tb	6813099.00	1.21	7391125.50	92.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03030.D\F6E03030.D#
Date Acquired: May 3 2016 06:17 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB2
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0468	ppb	36079.2	477.35	0.20	
9 Be	-0.0019	ppb	14.4	113.16	0.10	
11 B	-1.1240	ppb	5432.3	12.33	5.00	
23 Na	-1.7860	ppb	58349.0	13.37	40.00	
24 Mg	-0.2943	ppb	3952.9	4.36	10.00	
27 Al	-0.3574	ppb	3246.0	2.05	20.00	
28 Si	0.3142	ppb	1351.2	24.50	20.00	
31 P	-0.5825	ppb	7126.5	47.06	10.00	
39 K	-5.2400	ppb	29157.5	24.92	20.00	
40 Ca	1.6310	ppb	39955.6	2.45	25.00	
47 Ti	-0.0132	ppb	46.7	31.66	0.50	
51 V	0.0306	ppb	1623.0	52.35	0.50	
52 Cr	-0.0100	ppb	486.2	37.11	0.20	
55 Mn	-0.0054	ppb	1289.0	26.13	0.20	
56 Fe	0.9835	ppb	17164.1	7.06	10.00	
59 Co	-0.0054	ppb	138.9	28.76	0.20	
60 Ni	-0.0053	ppb	36.2	37.70	0.20	
63 Cu	-0.1313	ppb	202.7	3.48	0.40	
66 Zn	-0.0481	ppb	1340.1	40.69	2.00	
75 As	0.0237	ppb	62.9	73.41	0.20	
78 Se	0.0286	ppb	16.4	34.70	0.20	
88 Sr	0.0002	ppb	610.5	2528.40	0.20	
90 Zr	0.0066	ppb	308.9	24.85	2.00	
95 Mo	0.0528	ppb	441.1	5.86	0.40	
107 Ag	0.0003	ppb	20.0	56.21	0.20	
111 Cd	-0.0039	ppb	4.6	32.13	0.20	
118 Sn	0.0204	ppb	453.4	19.14	0.20	
121 Sb	0.3552	ppb	6587.4	5.28	0.40	
137 Ba	0.0043	ppb	114.4	48.26	0.20	
182 W	0.0099	ppb	342.2	6.45	1.00	
205 Tl	0.0032	ppb	254.5	32.13	0.20	
208 Pb	-0.0024	ppb	498.9	25.91	0.10	
235 U	0.0001	ppb	14.4	46.58	1.00	
238 U	0.0082	ppb	617.8	13.47	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	529217.0	1.64	667111.13	79.3	60 - 125	
45 Sc	1117401.1	0.91	1240412.40	90.1	60 - 125	
45 Sc	241480.5	1.45	269182.69	89.7	60 - 125	
45 Sc	2218328.0	0.84	2477756.30	89.5	60 - 125	
72 Ge	350232.1	0.76	375477.53	93.3	60 - 125	
72 Ge	151582.4	0.46	162224.16	93.4	60 - 125	
72 Ge	608760.1	0.38	660227.75	92.2	60 - 125	
115 In	4964975.5	1.06	5115350.00	97.1	60 - 125	
159 Tb	7445060.5	1.43	7391125.50	100.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03031.D\F6E03031.D#
Date Acquired:	May 3 2016 06:21 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E003-04
Misc Info:	
Vial Number:	2110
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	133826.5	0.0000	23.8300	ppb	0.70	50.00	
9 Be	# 3	6	592.3	0.0000	0.2977	ppb	5.39	50.00	
11 B	# 3	6	14874.6	0.0000	6.7540	ppb	4.70	100.00	
23 Na	# 1	45	1068731.0	0.0000	534.2000	ppb	0.61	50000.00	
24 Mg	# 3	45	64748952.0	0.0000	9957.0000	ppb	4.51	50000.00	
27 Al	# 3	45	50927728.0	0.0000	5607.0000	ppb	2.94	50000.00	
28 Si	# 1	45	1711932.0	0.0000	2523.0000	ppb	0.94	5000.00	
31 P	# 3	45	76260.8	0.0000	138.7000	ppb	0.92	500.00	
39 K	# 2	45	630197.4	0.0000	1234.0000	ppb	1.09	50000.00	
40 Ca	# 1	45	2508664100.0	0.0000	520000.0000	ppb	1.15	50000.00	>LRS
47 Ti	# 3	45	108616.2	0.0000	94.3000	ppb	0.97	500.00	
51 V	# 2	45	55523.3	0.0000	15.1000	ppb	0.55	500.00	
52 Cr	# 2	45	20398.5	0.0000	4.7470	ppb	1.21	500.00	
55 Mn	# 3	45	776524.2	0.0000	37.9500	ppb	1.91	3000.00	
56 Fe	# 1	45	29705860.0	0.0000	3768.0000	ppb	1.24	50000.00	
59 Co	# 3	45	76088.2	0.0000	4.9520	ppb	3.41	500.00	
60 Ni	# 2	45	13102.0	0.0000	8.9880	ppb	1.08	500.00	
63 Cu	# 2	45	19427.7	0.0000	5.0050	ppb	0.96	500.00	
66 Zn	# 3	72	40340.3	0.0000	14.3200	ppb	0.61	500.00	
75 As	# 2	72	4272.9	0.0000	6.3620	ppb	0.53	500.00	
78 Se	# 1	72	44.2	0.0000	0.1274	ppb	6.36	500.00	
88 Sr	# 3	72	21076450.0	0.0000	750.6000	ppb	1.06	500.00	>LRS
90 Zr	# 3	72	85061.7	0.0000	4.6340	ppb	1.37	50.00	
95 Mo	# 3	115	1484.6	0.0000	0.2538	ppb	2.16	500.00	
107 Ag	# 3	115	312.2	0.0000	0.0199	ppb	8.28	50.00	
111 Cd	# 3	115	828.3	0.0000	0.2358	ppb	14.08	500.00	
118 Sn	# 3	115	33103.5	0.0000	3.4720	ppb	1.58	500.00	
121 Sb	# 3	115	5749.2	0.0000	0.4113	ppb	5.67	500.00	
137 Ba	# 3	115	7451294.0	0.0000	1477.0000	ppb	2.63	1000.00	>LRS
182 W	# 3	159	13885.5	0.0000	0.9152	ppb	2.75	50.00	
205 Tl	# 3	159	2720.4	0.0000	0.0887	ppb	4.52	500.00	
208 Pb	# 3	159	111982.8	0.0000	2.6090	ppb	1.26	500.00	
235 U	# 3	159	774.5	0.0000	0.0142	ppb	7.26	30.00	
238 U	# 3	159	106266.9	0.0000	2.1440	ppb	2.13	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	408650.50	1.22	667111.13	61.3	60 - 125	
45 Sc # 1	842444.00	2.66	1240412.40	67.9	60 - 125	
45 Sc # 2	190525.52	0.30	269182.69	70.8	60 - 125	
45 Sc # 3	1756980.00	2.40	2477756.30	70.9	60 - 125	
72 Ge # 1	251381.48	1.61	375477.53	66.9	60 - 125	
72 Ge # 2	112019.20	0.34	162224.16	69.1	60 - 125	
72 Ge # 3	450391.41	0.29	660227.75	68.2	60 - 125	
115 In # 3	3780700.30	2.08	5115350.00	73.9	60 - 125	
159 Tb # 3	5913458.00	0.19	7391125.50	80.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

3 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03032.D\F6E03032.D#
Date Acquired: May 3 2016 06:25 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-05
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	127117.9	0.0000	19.2000	ppb	1.22	50.00	
9 Be	# 3	6	2953.7	0.0000	1.3490	ppb	4.84	50.00	
11 B	# 3	6	15627.6	0.0000	6.0440	ppb	1.34	100.00	
23 Na	# 1	45	149414.0	0.0000	40.9100	ppb	2.62	50000.00	
24 Mg	# 3	45	24119640.0	0.0000	3040.0000	ppb	0.59	50000.00	
27 Al	# 3	45	230486210.0	0.0000	20810.0000	ppb	1.38	50000.00	
28 Si	# 1	45	2244391.0	0.0000	2780.0000	ppb	1.57	5000.00	
31 P	# 3	45	206141.1	0.0000	321.8000	ppb	0.59	500.00	
39 K	# 2	45	2721732.0	0.0000	4667.0000	ppb	1.45	50000.00	
40 Ca	# 1	45	22285360.0	0.0000	3878.0000	ppb	1.28	50000.00	
47 Ti	# 3	45	496390.5	0.0000	353.7000	ppb	1.00	500.00	
51 V	# 2	45	193473.1	0.0000	45.3500	ppb	2.10	500.00	
52 Cr	# 2	45	117793.7	0.0000	23.6900	ppb	2.30	500.00	
55 Mn	# 3	45	10666480.0	0.0000	428.1000	ppb	1.44	3000.00	
56 Fe	# 1	45	216034590.0	0.0000	23040.0000	ppb	0.18	50000.00	
59 Co	# 3	45	176010.9	0.0000	9.4050	ppb	2.04	500.00	
60 Ni	# 2	45	32962.0	0.0000	19.2400	ppb	0.93	500.00	
63 Cu	# 2	45	77613.7	0.0000	17.4100	ppb	3.04	500.00	
66 Zn	# 3	72	183223.0	0.0000	52.9000	ppb	1.13	500.00	
75 As	# 2	72	6119.1	0.0000	7.4870	ppb	1.32	500.00	
78 Se	# 1	72	158.2	0.0000	0.3957	ppb	7.63	500.00	
88 Sr	# 3	72	966328.7	0.0000	27.4100	ppb	1.15	500.00	
90 Zr	# 3	72	110663.6	0.0000	4.8040	ppb	1.71	50.00	
95 Mo	# 3	115	5238.9	0.0000	0.7307	ppb	4.68	500.00	
107 Ag	# 3	115	1449.0	0.0000	0.0762	ppb	7.02	50.00	
111 Cd	# 3	115	2060.0	0.0000	0.4753	ppb	5.89	500.00	
118 Sn	# 3	115	51886.8	0.0000	4.3780	ppb	0.21	500.00	
121 Sb	# 3	115	8690.8	0.0000	0.5051	ppb	2.76	500.00	
137 Ba	# 3	115	955082.5	0.0000	152.1000	ppb	2.07	1000.00	
182 W	# 3	159	2568.1	0.0000	0.1293	ppb	3.85	50.00	
205 Tl	# 3	159	11973.7	0.0000	0.3233	ppb	1.63	500.00	
208 Pb	# 3	159	948660.1	0.0000	17.8600	ppb	1.95	500.00	
235 U	# 3	159	344.5	0.0000	0.0050	ppb	6.99	30.00	
238 U	# 3	159	42839.1	0.0000	0.6945	ppb	1.74	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	458931.72	0.54	667111.13	68.8	60 - 125	
45 Sc # 1	1002368.30	2.27	1240412.40	80.8	60 - 125	
45 Sc # 2	224255.47	2.73	269182.69	83.3	60 - 125	
45 Sc # 3	2141597.30	0.34	2477756.30	86.4	60 - 125	
72 Ge # 1	301024.72	2.05	375477.53	80.2	60 - 125	
72 Ge # 2	136450.67	0.71	162224.16	84.1	60 - 125	
72 Ge # 3	565206.88	0.61	660227.75	85.6	60 - 125	
115 In # 3	4703475.00	1.27	5115350.00	91.9	60 - 125	
159 Tb # 3	7347955.00	1.21	7391125.50	99.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03033.D\F6E03033.D#
Date Acquired:	May 3 2016 06:30 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E003-06
Misc Info:	
Vial Number:	2112
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	97165.2	0.0000	13.6100	ppb	5.85	50.00	
9 Be	# 3	6	2213.6	0.0000	1.0300	ppb	2.86	50.00	
11 B	# 3	6	12444.6	0.0000	4.1170	ppb	6.98	100.00	
23 Na	# 1	45	153091.7	0.0000	50.5600	ppb	4.68	50000.00	
24 Mg	# 3	45	22827990.0	0.0000	2858.0000	ppb	0.08	50000.00	
27 Al	# 3	45	178624990.0	0.0000	16020.0000	ppb	1.58	50000.00	
28 Si	# 1	45	2137494.0	0.0000	2960.0000	ppb	0.45	5000.00	
31 P	# 3	45	93621.8	0.0000	138.7000	ppb	1.21	500.00	
39 K	# 2	45	2008895.0	0.0000	3396.0000	ppb	0.91	50000.00	
40 Ca	# 1	45	22020000.0	0.0000	4286.0000	ppb	0.42	50000.00	
47 Ti	# 3	45	409970.0	0.0000	290.1000	ppb	1.84	500.00	
51 V	# 2	45	137195.3	0.0000	31.7400	ppb	1.58	500.00	
52 Cr	# 2	45	88810.9	0.0000	17.6600	ppb	1.21	500.00	
55 Mn	# 3	45	4010029.0	0.0000	159.8000	ppb	3.80	3000.00	
56 Fe	# 1	45	143233790.0	0.0000	17090.0000	ppb	1.92	50000.00	
59 Co	# 3	45	116981.7	0.0000	6.2040	ppb	2.31	500.00	
60 Ni	# 2	45	30172.5	0.0000	17.4400	ppb	1.03	500.00	
63 Cu	# 2	45	49917.6	0.0000	11.0200	ppb	0.77	500.00	
66 Zn	# 3	72	129415.8	0.0000	37.0000	ppb	0.69	500.00	
75 As	# 2	72	4107.1	0.0000	4.8710	ppb	1.14	500.00	
78 Se	# 1	72	51.6	0.0000	0.1335	ppb	7.78	500.00	
88 Sr	# 3	72	987152.3	0.0000	27.8200	ppb	1.26	500.00	
90 Zr	# 3	72	99754.4	0.0000	4.3020	ppb	1.60	50.00	
95 Mo	# 3	115	2893.7	0.0000	0.4035	ppb	3.29	500.00	
107 Ag	# 3	115	854.5	0.0000	0.0449	ppb	2.43	50.00	
111 Cd	# 3	115	916.3	0.0000	0.2098	ppb	11.00	500.00	
118 Sn	# 3	115	45299.3	0.0000	3.8420	ppb	2.14	500.00	
121 Sb	# 3	115	7255.5	0.0000	0.4199	ppb	1.67	500.00	
137 Ba	# 3	115	671756.9	0.0000	107.6000	ppb	2.53	1000.00	
182 W	# 3	159	1903.5	0.0000	0.0946	ppb	3.30	50.00	
205 Tl	# 3	159	8605.4	0.0000	0.2335	ppb	1.64	500.00	
208 Pb	# 3	159	591877.1	0.0000	11.2400	ppb	1.70	500.00	
235 U	# 3	159	178.9	0.0000	0.0026	ppb	5.49	30.00	
238 U	# 3	159	24540.9	0.0000	0.4008	ppb	2.02	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	449922.59	1.82	667111.13	67.4	60 - 125	
45 Sc # 1	896531.63	6.48	1240412.40	72.3	60 - 125	
45 Sc # 2	226467.44	0.68	269182.69	84.1	60 - 125	
45 Sc # 3	2156377.80	1.01	2477756.30	87.0	60 - 125	
72 Ge # 1	279895.72	5.12	375477.53	74.5	60 - 125	
72 Ge # 2	140320.14	1.64	162224.16	86.5	60 - 125	
72 Ge # 3	568863.25	0.58	660227.75	86.2	60 - 125	
115 In # 3	4676859.50	1.57	5115350.00	91.4	60 - 125	
159 Tb # 3	7280240.50	0.82	7391125.50	98.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03034.D\F6E03034.D#
Date Acquired:	May 3 2016 06:34 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E003-07
Misc Info:	
Vial Number:	2201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	111195.4	0.0000	15.7900	ppb	2.31	50.00	
9 Be	# 3	6	2728.1	0.0000	1.2330	ppb	6.87	50.00	
11 B	# 3	6	12977.2	0.0000	4.2180	ppb	4.11	100.00	
23 Na	# 1	45	192886.1	0.0000	52.4500	ppb	1.15	50000.00	
24 Mg	# 3	45	24585460.0	0.0000	2994.0000	ppb	1.11	50000.00	
27 Al	# 3	45	213824900.0	0.0000	18650.0000	ppb	1.04	50000.00	
28 Si	# 1	45	2386862.0	0.0000	2694.0000	ppb	1.66	5000.00	
31 P	# 3	45	107786.7	0.0000	156.7000	ppb	1.63	500.00	
39 K	# 2	45	2331175.0	0.0000	3773.0000	ppb	1.13	50000.00	
40 Ca	# 1	45	36573848.0	0.0000	5800.0000	ppb	0.21	50000.00	
47 Ti	# 3	45	445922.6	0.0000	306.9000	ppb	1.72	500.00	
51 V	# 2	45	160522.7	0.0000	35.5400	ppb	0.69	500.00	
52 Cr	# 2	45	105919.7	0.0000	20.1400	ppb	1.22	500.00	
55 Mn	# 3	45	5121098.0	0.0000	198.5000	ppb	2.38	3000.00	
56 Fe	# 1	45	198458700.0	0.0000	19280.0000	ppb	1.17	50000.00	
59 Co	# 3	45	135878.8	0.0000	7.0100	ppb	2.53	500.00	
60 Ni	# 2	45	33498.4	0.0000	18.5100	ppb	0.64	500.00	
63 Cu	# 2	45	63758.2	0.0000	13.4900	ppb	0.68	500.00	
66 Zn	# 3	72	150760.3	0.0000	41.0800	ppb	2.26	500.00	
75 As	# 2	72	4832.4	0.0000	5.4760	ppb	0.73	500.00	
78 Se	# 1	72	76.7	0.0000	0.1677	ppb	14.56	500.00	
88 Sr	# 3	72	1100941.0	0.0000	29.5300	ppb	0.30	500.00	
90 Zr	# 3	72	116893.7	0.0000	4.8000	ppb	2.99	50.00	
95 Mo	# 3	115	3599.5	0.0000	0.4829	ppb	1.56	500.00	
107 Ag	# 3	115	1323.4	0.0000	0.0672	ppb	5.61	50.00	
111 Cd	# 3	115	1093.1	0.0000	0.2411	ppb	7.33	500.00	
118 Sn	# 3	115	54981.0	0.0000	4.4810	ppb	2.76	500.00	
121 Sb	# 3	115	7694.6	0.0000	0.4282	ppb	5.07	500.00	
137 Ba	# 3	115	849756.8	0.0000	130.7000	ppb	2.84	1000.00	
182 W	# 3	159	1832.4	0.0000	0.0890	ppb	4.54	50.00	
205 Tl	# 3	159	9706.1	0.0000	0.2589	ppb	2.14	500.00	
208 Pb	# 3	159	661616.4	0.0000	12.3300	ppb	1.97	500.00	
235 U	# 3	159	224.5	0.0000	0.0032	ppb	17.34	30.00	
238 U	# 3	159	28539.2	0.0000	0.4577	ppb	2.46	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	463537.22	0.57	667111.13	69.5	60 - 125	
45 Sc # 1	1100375.00	1.09	1240412.40	88.7	60 - 125	
45 Sc # 2	236888.69	0.34	269182.69	88.0	60 - 125	
45 Sc # 3	2216954.30	0.66	2477756.30	89.5	60 - 125	
72 Ge # 1	335608.59	0.90	375477.53	89.4	60 - 125	
72 Ge # 2	147017.48	1.09	162224.16	90.6	60 - 125	
72 Ge # 3	597665.50	1.68	660227.75	90.5	60 - 125	
115 In # 3	4870521.50	1.29	5115350.00	95.2	60 - 125	
159 Tb # 3	7416842.50	0.35	7391125.50	100.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03035.D\F6E03035.D#
Date Acquired: May 3 2016 06:38 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E003-08
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 03 2016 04:45 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	113511.5	0.0000	19.2000	ppb	1.64	50.00	
9 Be	# 3	6	3483.9	0.0000	1.7840	ppb	5.07	50.00	
11 B	# 3	6	12232.1	0.0000	4.7780	ppb	4.24	100.00	
23 Na	# 1	45	477967.8	0.0000	195.3000	ppb	0.97	50000.00	
24 Mg	# 3	45	37043328.0	0.0000	5316.0000	ppb	1.78	50000.00	
27 Al	# 3	45	155834210.0	0.0000	16020.0000	ppb	2.56	50000.00	
28 Si	# 1	45	3477875.0	0.0000	4514.0000	ppb	0.96	5000.00	
31 P	# 3	45	88614.6	0.0000	151.5000	ppb	0.55	500.00	
39 K	# 2	45	1466681.0	0.0000	2745.0000	ppb	0.90	50000.00	
40 Ca	# 1	45	1263670000.0	0.0000	230600.0000	ppb	1.89	50000.00	>LRS
47 Ti	# 3	45	372217.1	0.0000	301.8000	ppb	1.15	500.00	
51 V	# 2	45	75250.8	0.0000	19.2100	ppb	0.50	500.00	
52 Cr	# 2	45	42456.0	0.0000	9.3300	ppb	0.39	500.00	
55 Mn	# 3	45	3065682.0	0.0000	140.0000	ppb	0.29	3000.00	
56 Fe	# 1	45	89677904.0	0.0000	10020.0000	ppb	0.42	50000.00	
59 Co	# 3	45	85115.5	0.0000	5.1700	ppb	0.66	500.00	
60 Ni	# 2	45	15953.9	0.0000	10.2300	ppb	0.76	500.00	
63 Cu	# 2	45	27024.0	0.0000	6.5590	ppb	0.21	500.00	
66 Zn	# 3	72	81760.0	0.0000	26.5500	ppb	1.45	500.00	
75 As	# 2	72	3431.1	0.0000	4.5570	ppb	0.49	500.00	
78 Se	# 1	72	57.3	0.0000	0.1427	ppb	2.20	500.00	
88 Sr	# 3	72	10757900.0	0.0000	346.0000	ppb	0.69	500.00	
90 Zr	# 3	72	551348.7	0.0000	27.1500	ppb	0.49	50.00	
95 Mo	# 3	115	2241.4	0.0000	0.3434	ppb	5.54	500.00	
107 Ag	# 3	115	1553.5	0.0000	0.0907	ppb	5.36	50.00	
111 Cd	# 3	115	3239.4	0.0000	0.8321	ppb	2.91	500.00	
118 Sn	# 3	115	47705.1	0.0000	4.4610	ppb	2.23	500.00	
121 Sb	# 3	115	3991.8	0.0000	0.2442	ppb	0.75	500.00	
137 Ba	# 3	115	2202625.0	0.0000	388.8000	ppb	1.02	1000.00	
182 W	# 3	159	2724.8	0.0000	0.1533	ppb	6.52	50.00	
205 Tl	# 3	159	7535.8	0.0000	0.2242	ppb	2.82	500.00	
208 Pb	# 3	159	605317.9	0.0000	12.6100	ppb	0.34	500.00	
235 U	# 3	159	370.0	0.0000	0.0060	ppb	7.07	30.00	
238 U	# 3	159	48720.6	0.0000	0.8749	ppb	2.52	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	409821.28	1.05	667111.13	61.4	60 - 125	
45 Sc # 1	956910.50	1.28	1240412.40	77.1	60 - 125	
45 Sc # 2	203830.80	0.63	269182.69	75.7	60 - 125	
45 Sc # 3	1881795.40	1.16	2477756.30	75.9	60 - 125	
72 Ge # 1	292917.59	0.94	375477.53	78.0	60 - 125	
72 Ge # 2	125222.13	0.66	162224.16	77.2	60 - 125	
72 Ge # 3	498742.22	0.21	660227.75	75.5	60 - 125	
115 In # 3	4244020.00	0.19	5115350.00	83.0	60 - 125	
159 Tb # 3	6636275.00	0.17	7391125.50	89.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E03.B\F6E03037.D\F6E03037.D#
Date Acquired: May 3 2016 06:47 pm
Operator: CCapul
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 03 2016 04:45 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.10 ppb	1.38	25.00	90 - 110	
9 Be	26.71 ppb	0.52	25.00	90 - 110	
11 B	51.03 ppb	3.47	50.00	90 - 110	
23 Na	24040.00 ppb	0.63	25000.00	90 - 110	
24 Mg	23110.00 ppb	4.43	25000.00	90 - 110	
27 Al	22610.00 ppb	4.17	25000.00	90 - 110	
28 Si	2414.00 ppb	0.64	2500.00	90 - 110	
31 P	241.60 ppb	1.32	250.00	90 - 110	
39 K	24330.00 ppb	0.48	25000.00	90 - 110	
40 Ca	24380.00 ppb	0.43	25000.00	90 - 110	
47 Ti	252.80 ppb	1.98	250.00	90 - 110	
51 V	254.30 ppb	1.48	250.00	90 - 110	
52 Cr	252.10 ppb	1.52	250.00	90 - 110	
55 Mn	1512.00 ppb	2.67	1500.00	90 - 110	
56 Fe	25030.00 ppb	0.39	25000.00	90 - 110	
59 Co	256.50 ppb	2.00	250.00	90 - 110	
60 Ni	256.30 ppb	0.29	250.00	90 - 110	
63 Cu	245.80 ppb	0.61	250.00	90 - 110	
66 Zn	245.80 ppb	1.42	250.00	90 - 110	
75 As	252.60 ppb	0.13	250.00	90 - 110	
78 Se	257.20 ppb	0.56	250.00	90 - 110	
88 Sr	251.80 ppb	0.65	250.00	90 - 110	
90 Zr	25.86 ppb	2.68	25.00	90 - 110	
95 Mo	247.00 ppb	4.15	250.00	90 - 110	
107 Ag	24.18 ppb	2.98	25.00	90 - 110	
111 Cd	252.10 ppb	1.26	250.00	90 - 110	
118 Sn	253.50 ppb	0.29	250.00	90 - 110	
121 Sb	244.80 ppb	2.07	250.00	90 - 110	
137 Ba	504.00 ppb	2.97	500.00	90 - 110	
182 W	24.77 ppb	1.56	25.00	90 - 110	
205 Tl	252.00 ppb	1.75	250.00	90 - 110	
208 Pb	242.90 ppb	3.72	250.00	90 - 110	
235 U	1.69 ppb	5.15	1.80	90 - 110	
238 U	248.50 ppb	3.63	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	481928.84	1.64	667111.13	72.2	60 - 125	
45 Sc	991449.88	1.93	1240412.40	79.9	60 - 125	
45 Sc	216197.14	0.16	269182.69	80.3	60 - 125	
45 Sc	2088389.40	1.64	2477756.30	84.3	60 - 125	
72 Ge	300704.28	1.62	375477.53	80.1	60 - 125	
72 Ge	132343.17	0.10	162224.16	81.6	60 - 125	
72 Ge	556792.88	1.41	660227.75	84.3	60 - 125	
115 In	4376851.00	2.46	5115350.00	85.6	60 - 125	
159 Tb	6829643.50	2.45	7391125.50	92.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E03.B\F6E03038.D\F6E03038.D#
Date Acquired:	May 3 2016 06:51 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB3
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 03 2016 04:45 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0934	ppb	36018.9	74.10	0.20	
9 Be	-0.0032	ppb	11.1	87.68	0.10	
11 B	-1.8030	ppb	4203.0	1.06	5.00	
23 Na	-3.3570	ppb	53402.3	3.96	40.00	
24 Mg	-0.2766	ppb	4111.8	2.55	10.00	
27 Al	-0.3093	ppb	3811.8	11.62	20.00	
28 Si	0.7446	ppb	1704.0	58.65	20.00	
31 P	-0.2452	ppb	7366.6	172.02	10.00	
39 K	-4.1910	ppb	29577.2	17.45	20.00	
40 Ca	2.5590	ppb	45069.4	3.93	25.00	
47 Ti	-0.0140	ppb	45.6	42.14	0.50	
51 V	0.0263	ppb	1591.2	24.86	0.50	
52 Cr	-0.0116	ppb	473.6	29.34	0.20	
55 Mn	-0.0006	ppb	1416.8	525.18	0.20	
56 Fe	1.8110	ppb	25352.4	10.09	10.00	
59 Co	-0.0049	ppb	147.8	19.13	0.20	
60 Ni	-0.0034	ppb	39.3	142.01	0.20	
63 Cu	-0.1241	ppb	235.1	1.10	0.40	
66 Zn	-0.0383	ppb	1371.2	46.90	2.00	
75 As	0.0333	ppb	70.4	28.79	0.20	
78 Se	0.0473	ppb	24.4	16.28	0.20	
88 Sr	-0.0033	ppb	474.5	69.81	0.20	
90 Zr	0.0074	ppb	327.8	11.95	2.00	
95 Mo	0.0761	ppb	604.5	11.02	0.40	
107 Ag	0.0003	ppb	20.0	46.45	0.20	
111 Cd	0.0001	ppb	21.9	3147.20	0.20	
118 Sn	0.0357	ppb	632.3	5.54	0.20	
121 Sb	0.4314	ppb	7758.0	6.94	0.40	Fail
137 Ba	0.0053	ppb	118.9	22.79	0.20	
182 W	0.0136	ppb	405.6	10.79	1.00	
205 Tl	0.0049	ppb	310.0	21.86	0.20	
208 Pb	-0.0011	ppb	560.0	24.48	0.10	
235 U	0.0001	ppb	10.0	92.14	1.00	
238 U	0.0122	ppb	851.2	21.59	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	524367.5	0.47	667111.13	78.6	60 - 125	
45 Sc	1097571.3	1.39	1240412.40	88.5	60 - 125	
45 Sc	239540.3	0.58	269182.69	89.0	60 - 125	
45 Sc	2225854.8	0.56	2477756.30	89.8	60 - 125	
72 Ge	342185.7	1.47	375477.53	91.1	60 - 125	
72 Ge	149042.8	0.74	162224.16	91.9	60 - 125	
72 Ge	606248.2	0.76	660227.75	91.8	60 - 125	
115 In	4877980.5	1.67	5115350.00	95.4	60 - 125	
159 Tb	7326470.0	0.48	7391125.50	99.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E03.B\F6E03004.D\F6E03004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IME003S01	IME003SB	2.05	g	5/3/16 12:21	100	2	100	1	
16IME003S02	IME003SL	2.06	g	5/3/16 12:22	100	2	100	1	
16IME003S03	E003-01	2.03	g	5/3/16 12:22	100	2	100	0.985	
16IME003S04	E003-01M	2.05	g	5/3/16 12:23	100	2	100	0.976	
16IME003S05	E003-01D	2.05	g	5/3/16 12:24	100	2	100	0.976	
16IME003S06	E003-02	2.05	g	5/3/16 12:24	100	2	100	0.976	
16IME003S07	E003-03	2.06	g	5/3/16 12:26	100	2	100	0.971	
16IME003S08	E003-04	2.06	g	5/3/16 12:27	100	2	100	0.971	
16IME003S09	E003-05	2.09	g	5/3/16 12:28	100	2	100	0.957	
16IME003S10	E003-06	2.09	g	5/3/16 12:29	100	2	100	0.957	
16IME003S11	E003-07	2.08	g	5/3/16 12:30	100	2	100	0.962	
16IME003S12	E003-08	2.02	g	5/3/16 12:31	100	2	100	0.99	

SP 5/3/16

Balance ID: 10203192. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/3/16 14:22

Prepared By: SPara

☑ Digestion Ended @ 5/3/16 15:48

Checked By: CW

Comments:

Date 5/3/16

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 02515001

Book #: EIM-058
Batch: TME003
Matrix: Soil
Digestor ID: D

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	92.6 °C		92.4 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 03 - 05	4
LCS-2	SM6A - 007 - 02 - 30	4
MS	Same spike solns vol as LCS 1 & 2	
Blank Soil (Bead)	SM5A - 03 - 02 - 09	2g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 005 - 16 - 15	10
HCl	↓ - 15 - 24	5+5
H_2O_2	↓ - 14 - 23	10
HNO_3(1:1)	SM5B - 03 - 69 - 04	10
pH Strip (0-14)	NA	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 07
☑ Thermometer ID:	150590425/ D26
☑ Pipette ID:	142780357
☐ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP
Standard Added By: SP Witnessed By: [illegible]
Extract Rcvd By: [illegible] Checked By: [illegible]

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E014**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E014**

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LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-05-2016
EMAX Batch No.: 16E014

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Laboratory Report
Project: CANNON AFB PBR

Enclosed is the Laboratory report for samples received on 05/04/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CABAC-SB04-000.5	E014-01	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB04-005	E014-02	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB04-010	E014-03	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB03-000.5	E014-04	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB03-200.5	E014-05	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB03-005	E014-06	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB03-010	E014-07	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB02-000.5	E014-08	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB02-005	E014-09	05/03/16	SOIL	2 METALS BY ICP-MS
CABAC-SB02-010	E014-10	05/03/16	SOIL	2 METALS BY ICP-MS

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16E014

METHOD SW6020A
TOTAL METALS BY ICP-MS

A total of ten (10) soil samples were received on 05/04/16 to be analyzed for Total Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME006SB - 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) LCS was analyzed. All Analytes in IME006SL - all analytes were within LCS QC limits. 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) MS was analyzed. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC 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.

Reference Number: SM02.7.3

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 16E014
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7829 8149 3440	Recipient J. Hall
☐ EMAX Courier ☐ Client Delivery		Date 5/4/16 Time 915

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: Changes made are not initialed/dated

PACKAGING INSPECTION

Container ☑ Cooler ☐ Box ☐ Other
Condition ☑ Custody Seal ☑ Intact ☐ Damaged
Packaging ☑ Bubble Pack ☐ Styrofoam ☐ Popcorn ☑ Sufficient ☐ _____
Temperatures (Cool, ≤6 °C but not frozen) ☑ Cooler 1 3.2 °C ☐ Cooler 2 _____ °C ☐ Cooler 3 _____ °C ☐ Cooler 4 _____ °C ☐ Cooler 5 _____ °C ☐ Cooler 6 _____ °C ☐ Cooler 7 _____ °C ☐ Cooler 8 _____ °C ☐ Cooler 9 _____ °C ☐ Cooler 10 _____ °C
Thermometer: A - S/N _____ B - S/N 1402520 70 C - S/N 1402520 67 D - S/N 1505556 30

FM 1/20/15

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
11-18	12, 13, 17, 18, 23, 24, 30-31, 36-37, 41, 42, 48, 49, 54, 55, 59, 60, 62, 63	D22	On bubble bag label: (2) DI H2O/ Na_2SO_4. On vial: SOBI (pre-weighed)	R1
~~12~~ - 5/4/16	~~22~~ - 5/4/16			

5/4/16

☐ 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:

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in _____	D13	Out of Holding Time	R1	Proceed as indicated in ☑ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	_____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	_____
D10	No initial/date on corrections in COC/label	D22	_____	R10	_____
D11	Container count mismatch COC vs received	D23	_____	R11	_____
D12	Container size mismatch COC vs received	D24	_____	R12	_____

REVIEWS:

Sample Labeling _____ Date 5/4/16 5/4/16
SRF _____ Date 5/4/16
PM _____ Date 5/4/16

ORIGIN ID:CVNA (402) 321-0977
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 03MAY16
ACTWGT: 49.30 LB
CAD: 006993959/SSFE1703
DIMS: 24x13x12 IN

BILL THIRD PARTY

J1 # 156237-4835 RIT2 12/15
540 11/5323/7225

TO **SAMPLE CUSTODIAN**
EMAX LABORATORIES
1835 WEST 205TH STREET

TORRANCE CA 90501

(310) 618-0818 REF:
INV:
PO: DEPT:

FedEx Express

J161016020501uv

WED - 04 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7829 8149 3440**

A7 HHRA

90501
CA-US **LAX**

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16E014

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: CAFB, Clovis, NM
Project Manager: Mike Sonderman
Sampler(s): K. Kloewer and J. Carritt

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	Arsenic and Thallium (6020A)	VOCs 8260B	TPH-GRO 8015	TPH-DRO/ORO 8015	Preservative / Remarks
1	5/3/16	0810		X	CABAC-SB04-000.5	Soil	1	4 oz. glass jar	X				4°C
2	5/3/16	0815		X	CABAC-SB04-005	↓	↓	↓	X				↓
3	5/3/16	0825		X	CABAC-SB04-010	↓	↓	↓	X				↓
4	5/3/16	0903		X	CABAC-SB03-000.5	↓	↓	↓	X				↓
5	5/3/16	0905		X	CABAC-SB03-200.5	↓	↓	↓	X				↓
6	5/3/16	0912		X	CABAC-SB03-005	↓	↓	↓	X				↓
7	5/3/16	0920		X	CABAC-SB03-010	↓	↓	↓	X				↓
8	5/3/16	1000		X	CABAC-SB02-000.5	↓	↓	↓	X				↓
9	5/3/16	1005		X	CABAC-SB02-005	↓	↓	↓	X				↓
10	5/3/16	1015		X	CABAC-SB02-010	↓	↓	↓	X				↓
11	5/3/16	1255		X	CAAT109-SB21A-015	↓	See Special Instructions	↓		X	X	X	↓
12	5/3/16	1315		X	CAAT109-SB-220	↓	↓	↓		X	X	X	
13	5/3/16	1320		X	CAAT109-SB21A-020	↓	↓	↓		X	X	X	
	~~5/3/16~~	~~1354~~		~~X~~	~~CAAT109-SB30-001~~					~~X~~	~~X~~	~~X~~	

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: [signature]	5/3/16	17:00	Method of Shipment: FedEx	VOCs = (2) 40mL VOAs, NaSO4, (1) 40mL VOA, MeOH
Received by: [signature]	5/4/16	915	Airbill No.:	24 TAT
Relinquished by:			Lab Address: Emax Laboratories 1835 West 205th St. Torrance, CA 90501	TPH-GRO = (2) 40mL VOA, MeOH TPH-DRO/ORO = (1) 4oz glass jar
Received for Laboratory by:				

3.2°C

130412

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16E014

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: CAFB, Clovis, NM
Project Manager: Mike Sonderman
Sampler(s): K. Kloewer and J. Carritt

Analytical Parameters: VOCs 8260B; TPH-GRO 8015C; TPH-DRO/ORO 8015C

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	VOCs 8260B	TPH-GRO 8015C	TPH-DRO/ORO 8015C	Preservative / Remarks
14	5/3/16	1354		X	CAAT109-SB30-001	Soil	See Instructions	Special	X	X	X	
15	5/3/16	1405		X	CAAT109-SB30-004	↓	↓	↓	X	X	X	
16	5/3/16	1425		X	CAAT109-SB30-010	↓	↓	↓	X	X	X	
17	5/3/16	1451	(SC)	X	CAAT109-SB03-015	↓	↓	↓	X	X	X	
18	5/3/16	1512		X	CAAT109-SB30-020	↓	X	3	X	X	X	MS/MSD

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by:	5/3/16	17:00	Method of Shipment: FedEx	VOCs = (2) 40mL VOAs, $NaSO_4$ (1) 40mL VOAs, MeOH
Received by:	5/4/16	915	Airbill No.:	TPH-GRO = (2) 40mL VOA, MeOH
Relinquished by:			Lab Address: Emax Laboratories 1835 West 205th St. Torrance, CA 90501	TPH-DRO/ORO = (1) 4oz glass Jar
Received for Laboratory by:				24 TAT

3.2°C

P Drive/Office Administration/Chain of Custody Form (Nov 2012) White copy - Laboratory Yellow copy - Laboratory Pink copy - URS

130413

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 or estimated value.
*	*	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.

LAB CHRONICLE
TOTAL METALS BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16E014
Instrument ID : T-IF6

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IME006SB	1	NA	05/04/1616:18	05/04/1612:15	F6E04017	F6E04015	IME006S	Method Blank
LCS1S	IME006SL	1	NA	05/04/1616:22	05/04/1612:15	F6E04018	F6E04015	IME006S	Lab Control Sample (LCS)
CABAC-SB04-000.5MS	E014-01M	0.971	4.8	05/04/1616:27	05/04/1612:15	F6E04019	F6E04015	IME006S	Matrix Spike Sample (MS)
CABAC-SB04-000.5AS	E014-01A	0.985	4.8	05/04/1616:31	05/04/1612:15	F6E04020	F6E04015	IME006S	Analytical Spike Sample
CABAC-SB04-000.5	E014-01	0.985	4.8	05/04/1616:35	05/04/1612:15	F6E04021	F6E04015	IME006S	Field Sample
CABAC-SB04-000.5DL	E014-01J	4.93	4.8	05/04/1616:39	05/04/1612:15	F6E04022	F6E04015	IME006S	Diluted Sample
CABAC-SB04-000.5DUP	E014-01D	0.990	4.8	05/04/1616:44	05/04/1612:15	F6E04023	F6E04015	IME006S	Duplicate Sample
CABAC-SB04-005	E014-02	0.990	11.3	05/04/1616:48	05/04/1612:15	F6E04024	F6E04015	IME006S	Field Sample
CABAC-SB04-010	E014-03	0.985	4.8	05/04/1616:52	05/04/1612:15	F6E04025	F6E04015	IME006S	Field Sample
CABAC-SB03-000.5	E014-04	0.976	8.9	05/04/1616:56	05/04/1612:15	F6E04026	F6E04015	IME006S	Field Sample
CABAC-SB03-200.5	E014-05	0.980	5.1	05/04/1617:09	05/04/1612:15	F6E04029	F6E04027	IME006S	Field Sample
CABAC-SB03-005	E014-06	0.980	13.0	05/04/1617:13	05/04/1612:15	F6E04030	F6E04027	IME006S	Field Sample
CABAC-SB03-010	E014-07	0.980	7.4	05/04/1617:18	05/04/1612:15	F6E04031	F6E04027	IME006S	Field Sample
CABAC-SB02-000.5	E014-08	0.976	3.7	05/04/1617:22	05/04/1612:15	F6E04032	F6E04027	IME006S	Field Sample
CABAC-SB02-005	E014-09	0.980	11.0	05/04/1617:26	05/04/1612:15	F6E04033	F6E04027	IME006S	Field Sample
CABAC-SB02-010	E014-10	0.976	8.2	05/04/1617:31	05/04/1612:15	F6E04034	F6E04027	IME006S	Field Sample

FN - Filename
% Moist - Percent Moisture

RESULTS SUMMARIES

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB04-000.5	Date Analyzed:	05/04/16 16:35
Lab Samp ID:	E014-01	Dilution Factor:	0.985
Lab File ID:	F6E04021	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	4.8
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.72	0.517	0.0517	0.103
Thallium	0.134J	0.517	0.0517	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB04-005	Date Analyzed:	05/04/16 16:48
Lab Samp ID:	E014-02	Dilution Factor:	0.990
Lab File ID:	F6E04024	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	11.3
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.20	0.558	0.0558	0.112
Thallium	0.180J	0.558	0.0558	0.112

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB04-010	Date Analyzed:	05/04/16 16:52
Lab Samp ID:	E014-03	Dilution Factor:	0.985
Lab File ID:	F6E04025	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	4.8
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.52	0.517	0.0517	0.103
Thallium	0.0756J	0.517	0.0517	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-000.5	Date Analyzed:	05/04/16 16:56
Lab Samp ID:	E014-04	Dilution Factor:	0.976
Lab File ID:	F6E04026	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	8.9
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.48	0.536	0.0536	0.107
Thallium	0.209J	0.536	0.0536	0.107

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-200.5	Date Analyzed:	05/04/16 17:09
Lab Samp ID:	E014-05	Dilution Factor:	0.980
Lab File ID:	F6E04029	Matrix	: SOIL
Ext Btch ID:	IME006S	% Moisture	: 5.1
Calib. Ref.:	F6E04027	Instrument ID	: T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.26	0.516	0.0516	0.103
Thallium	0.132J	0.516	0.0516	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-005	Date Analyzed:	05/04/16 17:13
Lab Samp ID:	E014-06	Dilution Factor:	0.980
Lab File ID:	F6E04030	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	13.0
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.85	0.563	0.0563	0.113
Thallium	0.0958J	0.563	0.0563	0.113

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-010	Date Analyzed:	05/04/16 17:18
Lab Samp ID:	E014-07	Dilution Factor:	0.980
Lab File ID:	F6E04031	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	7.4
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.95	0.529	0.0529	0.106
Thallium	0.138J	0.529	0.0529	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB02-000.5	Date Analyzed:	05/04/16 17:22
Lab Samp ID:	E014-08	Dilution Factor:	0.976
Lab File ID:	F6E04032	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	3.7
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.64	0.507	0.0507	0.101
Thallium	0.102J	0.507	0.0507	0.101

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB02-005	Date Analyzed:	05/04/16 17:26
Lab Samp ID:	E014-09	Dilution Factor:	0.980
Lab File ID:	F6E04033	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	11.0
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.75	0.551	0.0551	0.110
Thallium	0.107J	0.551	0.0551	0.110

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB02-010	Date Analyzed:	05/04/16 17:31
Lab Samp ID:	E014-10	Dilution Factor:	0.976
Lab File ID:	F6E04034	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	8.2
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.51	0.532	0.0532	0.106
Thallium	0.116J	0.532	0.0532	0.106

QC SUMMARIES

METHOD BLANK

Method: 6020A

QC Measure: IME006SB

Associated Samples:

CABAC-SB04-000.5
CABAC-SB04-005
CABAC-SB04-010
CABAC-SB03-000.5
CABAC-SB03-200.5
CABAC-SB03-005
CABAC-SB03-010
CABAC-SB02-000.5
CABAC-SB02-005
CABAC-SB02-010

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	MBLK1S	Date Analyzed:	05/04/16 16:18
Lab Samp ID:	IME006SB	Dilution Factor:	1
Lab File ID:	F6E04017	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	NA
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

LCS/LCSD

Method: 6020A

QC Measure: IME006SL

Associated Samples:

CABAC-SB04-000.5
CABAC-SB04-005
CABAC-SB04-010
CABAC-SB03-000.5
CABAC-SB03-200.5
CABAC-SB03-005
CABAC-SB03-010
CABAC-SB02-000.5
CABAC-SB02-005
CABAC-SB02-010

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E014
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME006SB	IME006SL		
LAB FILE ID:	F6E04017	F6E04018		
DATIME EXTRCTD:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	NA
DATIME ANALYZD:	05/04/1616:18	05/04/1616:22	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.7	99	80-120
Thallium	ND	20.0	20.3	101	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.985	0.971		
SAMPLE ID:	CABAC-SB04-000.5			
CONTROL NO.:	E014-01	E014-01M		
LAB FILE ID:	F6E04021	F6E04019		
DATIME EXTRCTD:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATIME ANALYZD:	05/04/1616:35	05/04/1616:27	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	2.72	20.4	22.4	97	80-120
Thallium	0.134J	20.4	20.2	98	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.985	4.93		
SAMPLE ID:	CABAC-SB04-000	CABAC-SB04-000		
EMAX SAMP ID:	E014-01	E014-01J		
LAB FILE ID:	F6E04021	F6E04022		
DATE EXTRACTED:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATE ANALYZED:	05/04/1616:35	05/04/1616:39	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	2.72	2.74	1	10
Thallium	.134J	ND	NA	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E014
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.985	0.985		
SAMPLE ID:	CABAC-SB04-000.5			
CONTROL NO.:	E014-01	E014-01A		
LAB FILE ID:	F6E04021	F6E04020		
DATIME EXTRCTD:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATIME ANALYZD:	05/04/1616:35	05/04/1616:31	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	2.72	20.7	23.4	100	75-125
Thallium	0.134J	20.7	20.8	100	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.985	0.990		
SAMPLE ID:	CABAC-SB04-000	CABAC-SB04-000		
EMAX SAMP ID:	E014-01	E014-01D		
LAB FILE ID:	F6E04021	F6E04023		
DATE EXTRACTED:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATE ANALYZED:	05/04/1616:35	05/04/1616:44	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	2.72	2.86	5	20
Thallium	.134J	.137J	NA	20

RAW DATA

METALS

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB04-000.5	Date Analyzed:	05/04/16 16:35
Lab Samp ID:	E014-01	Dilution Factor:	0.985
Lab File ID:	F6E04021	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	4.8
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.72	0.517	0.0517	0.103
Thallium	0.134J	0.517	0.0517	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB04-005	Date Analyzed:	05/04/16 16:48
Lab Samp ID:	E014-02	Dilution Factor:	0.990
Lab File ID:	F6E04024	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	11.3
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.20	0.558	0.0558	0.112
Thallium	0.180J	0.558	0.0558	0.112

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB04-010	Date Analyzed:	05/04/16 16:52
Lab Samp ID:	E014-03	Dilution Factor:	0.985
Lab File ID:	F6E04025	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	4.8
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.52	0.517	0.0517	0.103
Thallium	0.0756J	0.517	0.0517	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-000.5	Date Analyzed:	05/04/16 16:56
Lab Samp ID:	E014-04	Dilution Factor:	0.976
Lab File ID:	F6E04026	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	8.9
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.48	0.536	0.0536	0.107
Thallium	0.209J	0.536	0.0536	0.107

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-200.5	Date Analyzed:	05/04/16 17:09
Lab Samp ID:	E014-05	Dilution Factor:	0.980
Lab File ID:	F6E04029	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	5.1
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.26	0.516	0.0516	0.103
Thallium	0.132J	0.516	0.0516	0.103

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-005	Date Analyzed:	05/04/16 17:13
Lab Samp ID:	E014-06	Dilution Factor:	0.980
Lab File ID:	F6E04030	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	13.0
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.85	0.563	0.0563	0.113
Thallium	0.0958J	0.563	0.0563	0.113

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB03-010	Date Analyzed:	05/04/16 17:18
Lab Samp ID:	E014-07	Dilution Factor:	0.980
Lab File ID:	F6E04031	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	7.4
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.95	0.529	0.0529	0.106
Thallium	0.138J	0.529	0.0529	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB02-000.5	Date Analyzed:	05/04/16 17:22
Lab Samp ID:	E014-08	Dilution Factor:	0.976
Lab File ID:	F6E04032	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	3.7
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.64	0.507	0.0507	0.101
Thallium	0.102J	0.507	0.0507	0.101

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB02-005	Date Analyzed:	05/04/16 17:26
Lab Samp ID:	E014-09	Dilution Factor:	0.980
Lab File ID:	F6E04033	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	11.0
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.75	0.551	0.0551	0.110
Thallium	0.107J	0.551	0.0551	0.110

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/03/16
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	CABAC-SB02-010	Date Analyzed:	05/04/16 17:31
Lab Samp ID:	E014-10	Dilution Factor:	0.976
Lab File ID:	F6E04034	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	8.2
Calib. Ref.:	F6E04027	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.51	0.532	0.0532	0.106
Thallium	0.116J	0.532	0.0532	0.106

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/04/16
SDG NO.	: 16E014	Date Extracted:	05/04/16 12:15
Sample ID:	MBLK1S	Date Analyzed:	05/04/16 16:18
Lab Samp ID:	IME006SB	Dilution Factor:	1
Lab File ID:	F6E04017	Matrix :	SOIL
Ext Btch ID:	IME006S	% Moisture :	NA
Calib. Ref.:	F6E04015	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100
Thallium	ND	0.500	0.0500	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME006SB	IME006SL		
LAB FILE ID:	F6E04017	F6E04018		
DATIME EXTRCTD:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	NA
DATIME ANALYZD:	05/04/1616:18	05/04/1616:22	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	19.7	99	80-120
Thallium	ND	20.0	20.3	101	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.985	0.971		
SAMPLE ID:	CABAC-SB04-000.5			
CONTROL NO.:	E014-01	E014-01M		
LAB FILE ID:	F6E04021	F6E04019		
DATIME EXTRCTD:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATIME ANALYZD:	05/04/1616:35	05/04/1616:27	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	2.72	20.4	22.4	97	80-120
Thallium	0.134J	20.4	20.2	98	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.985	4.93		
SAMPLE ID:	CABAC-SB04-000	CABAC-SB04-000		
EMAX SAMP ID:	E014-01	E014-01J		
LAB FILE ID:	F6E04021	F6E04022		
DATE EXTRACTED:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATE ANALYZED:	05/04/1616:35	05/04/1616:39	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	2.72	2.74	1	10
Thallium	.134J	ND	NA	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.985	0.985		
SAMPLE ID:	CABAC-SB04-000.5			
CONTROL NO.:	E014-01	E014-01A		
LAB FILE ID:	F6E04021	F6E04020		
DATIME EXTRCTD:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATIME ANALYZD:	05/04/1616:35	05/04/1616:31	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	2.72	20.7	23.4	100	75-125
Thallium	0.134J	20.7	20.8	100	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E014
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.985	0.990		
SAMPLE ID:	CABAC-SB04-000	CABAC-SB04-000		
EMAX SAMP ID:	E014-01	E014-01D		
LAB FILE ID:	F6E04021	F6E04023		
DATE EXTRACTED:	05/04/1612:15	05/04/1612:15	DATE COLLECTED:	05/03/16
DATE ANALYZED:	05/04/1616:35	05/04/1616:44	DATE RECEIVED:	05/04/16
PREP. BATCH:	IME006S	IME006S		
CALIB. REF:	F6E04015	F6E04015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	2.72	2.86	5	20
Thallium	.134J	.137J	NA	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 5/4/16 17:18

End Date: 5/4/16 17:39

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Book #:	AF6-015
Instrument No.:	F6
Analytical Batch:	1F6E04
Analytical Sequence:	F6E04
Method File:	EMX6020H
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☑ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B059.72.05	MRL1 (1)	SM6B059.76.06
S1	.76.01	MRL2 (05)	.76.07
S2	73.02	MRL3 (CAT)	76.08
S3	.73.03	MRL4	NA
S4	.73.04	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B059.68.07
S7		Post-Spike 1	SM6A007.03.05
ICV	SM6B059.71.03	Post-Spike 2	.03.06
CCV	.74.01	Post-Spike 3	NA
ICSA	.76.04	Post-Spike 4	
ICSAB	.76.05		
6020 TUNE SOLN.	.65.04		
200.8 TUNE SOLN.	.65.05		

Analyzed By: [signature]

Date: 5/4/16

ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

SEQUENCE FILE : IF6E04

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
F6E04003	BLNK	15:18	05/04/16	1.00
F6E04004	S0	15:23	05/04/16	1.00
F6E04005	S1 0.5	15:27	05/04/16	1.00
F6E04006	S2 50	15:32	05/04/16	1.00
F6E04007	S3 250	15:36	05/04/16	1.00
F6E04008	S4 500	15:40	05/04/16	1.00
F6E04009	ICV	15:44	05/04/16	1.00
F6E04010	ICB	15:48	05/04/16	1.00
F6E04011	MRLE0401	15:52	05/04/16	1.00
F6E04012	ICSA	15:56	05/04/16	1.00
F6E04013	ICSAB	16:01	05/04/16	1.00
F6E04014	MRLE0402	16:05	05/04/16	1.00
F6E04015	CCV1	16:10	05/04/16	1.00
F6E04016	CCB1	16:14	05/04/16	1.00
F6E04017	IME006SB	16:18	05/04/16	1.00
F6E04018	IME006SL	16:22	05/04/16	1.00
F6E04019	E014-01M	16:27	05/04/16	1.00
F6E04020	E014-01A	16:31	05/04/16	1.00
F6E04021	E014-01	16:35	05/04/16	1.00
F6E04022	E014-01J	16:39	05/04/16	5.00
F6E04023	E014-01D	16:44	05/04/16	1.00
F6E04024	E014-02	16:48	05/04/16	1.00
F6E04025	E014-03	16:52	05/04/16	1.00
F6E04026	E014-04	16:56	05/04/16	1.00
F6E04027	CCV2	17:01	05/04/16	1.00
F6E04028	CCB2	17:05	05/04/16	1.00
F6E04029	E014-05	17:09	05/04/16	1.00
F6E04030	E014-06	17:13	05/04/16	1.00
F6E04031	E014-07	17:18	05/04/16	1.00
F6E04032	E014-08	17:22	05/04/16	1.00
F6E04033	E014-09	17:26	05/04/16	1.00
F6E04034	E014-10	17:31	05/04/16	1.00
F6E04035	CCV3	17:35	05/04/16	1.00
F6E04036	CCB3	17:39	05/04/16	1.00

SDG : IE014 UNIT : % ICPMS CHECK : IF6E04 DATE : 05/04/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	107	108	105	101	99	99	103	98	100	101	98	102	102	96	100	95	98	92	97	100	103	101	95	100	109	99	101	102	104	90	96	88*	95
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0401	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	99	98	97	----	102	97	96	105	----	----	----	96	----	----	----	----	----	----	----	----	101	----	----	----	----	----	----	----	----	----
ICSAB	101	101	96	99	97	96	101	100	97	95	104	103	105	104	94	105	95	93	106	103	112	104	46*	102	98	101	102	106	103	95	99	90	97
MRLE0402	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	103	101	102	100	101	100	97	101	99	97	100	100	98	101	98	101	97	92	99	99	101	98	99	103	102	99	99	100	102	96	93	88*	95
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME006S8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME006SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	103	109	104	93	91	91	93	94	96	96	99	104	103	102	102	102	103	98	99	99	102	103	102	100	100	99	101	100	102	98	95	90	98
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	106	112*	105	91	89*	89*	92	93	97	95	99	105	105	102	102	104	105	100	99	100	103	104	100	99	101	103	100	100	103	97	94	89*	94
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

SDG : WE014 UNIT : UG/L SUMMARY of CALIBRATION BLANKS : IF6E04 (SOIL) DATE : 05/04/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	-.029	.000	-.763	.212	.298	.208	1.20	-2.22	-1.66	.846	.010	-.021	-.011	.030	2.67	.001	.008	.010	.031	.024	.078	-.010	.006	.107	.000	.002	.065	.096	.004	.027	.021	.006	.017
MRLE0401	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	.711	.004	.109	----	----	----	4.90	----	----	----	----	.017	1.29	.351	----	.286	.198	.957	2.34	.169	.072	.661	.179	----	.023	.259	.047	.134	.105	.132	.007	.199	.006
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE0402	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	-.007	-.008	-.843	-.754	.512	.164	-.988	-1.82	-1.52	.728	.004	-.011	-.017	.013	2.23	-.003	-.000	.013	.017	.008	.041	-.009	.002	.114	.000	-.000	.033	.186	.003	.014	.005	.003	.012
IME006S8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME006SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.126	-.003	-1.85	-.408	.252	.187	-1.13	-1.61	-2.98	1.02	-.000	-.017	-.020	.015	2.44	-.001	.001	.002	.017	.003	.052	-.010	.003	.066	.000	.000	.035	.245	-.000	.010	.005	.003	.011
E014-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E014-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	.118	-.010	-2.16	-.227	.224	.168	-1.55	-1.47	-1.88	1.50	-.003	.017	-.024	.015	2.32	-.002	.000	.002	.046	.012	.047	-.009	.001	.064	.000	.003	.034	.276	.006	.012	.005	.003	.012

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E04001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E04002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	F6E04003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1201	F6E04004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	F6E04005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	F6E04006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	F6E04007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	F6E04008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	F6E04009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1201	F6E04010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	F6E04011	MRLE0401	0.5/50/4 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	F6E04012	ICSA		1.000				
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	F6E04013	ICSAB		1.000				
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6E04014	MRLE0402	1/100/10 ppb	1.000				
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E04015	CCV1		1.000				
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E04016	CCB1		1.000				
20		Keyword		CALEND	End of CALIB						
21		Keyword		SMPLBEG	Start of SMPL						
22	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2101	F6E04017	IME006SB		1.000				
23	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2102	F6E04018	IME006SL		1.000				
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2103	F6E04019	E014-01M		1.000				
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2104	F6E04020	E014-01A		1.000				
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2105	F6E04021	E014-01		1.000				
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2106	F6E04022	E014-01J		5.000				
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2107	F6E04023	E014-01D		1.000				
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2108	F6E04024	E014-02		1.000				
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2109	F6E04025	E014-03		1.000				
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2110	F6E04026	E014-04		1.000				
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E04027	CCV2		1.000				
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E04028	CCB2		1.000				
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2111	F6E04029	E014-05		1.000				
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2112	F6E04030	E014-06		1.000				
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2201	F6E04031	E014-07		1.000				
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2202	F6E04032	E014-08		1.000				
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2203	F6E04033	E014-09		1.000				
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2204	F6E04034	E014-10		1.000				
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E04035	CCV3		1.000				
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E04036	CCB3		1.000				

55

Last Calib: May 04, 2016 03:42 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62016\e\if6e04.b\f6e04004.d\f6e04004.d#	S0	May 4 2016 03:23 pm
2	c:\data\if62016\e\if6e04.b\f6e04005.d\f6e04005.d#	S1 0.5	May 4 2016 03:27 pm
3	c:\data\if62016\e\if6e04.b\f6e04006.d\f6e04006.d#	S2 50	May 4 2016 03:32 pm
4	c:\data\if62016\e\if6e04.b\f6e04007.d\f6e04007.d#	S3 250	May 4 2016 03:36 pm
5	c:\data\if62016\e\if6e04.b\f6e04008.d\f6e04008.d#	S4 500	May 4 2016 03:40 pm
6	---		
7	---		
8	---		
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11	---		
12	---		
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14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62016\E\IF6E04.B\EMX6020H.C

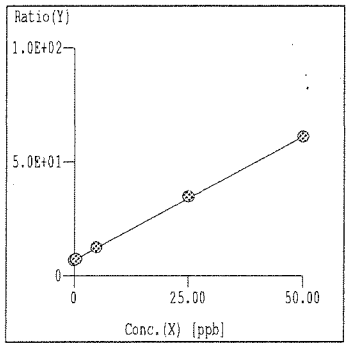
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

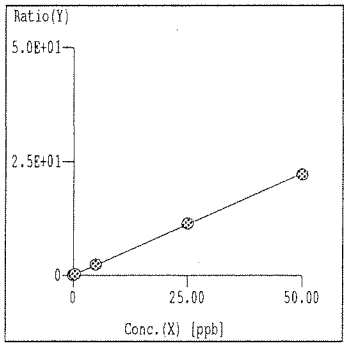
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 7 Li 6 ppb



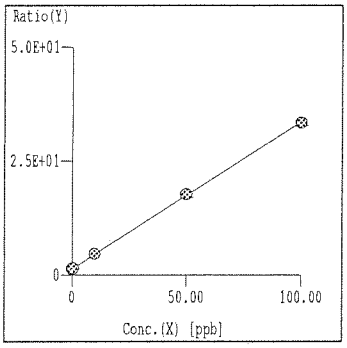
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.089E+000*X +6.718E+000
X = 9.183E-001*Y -6.169E+000
DL = 1.226E-01 ppb
BEC = 6.169 ppb

Step Mass Element ISTD Unit
(3) 9 Be 6 ppb



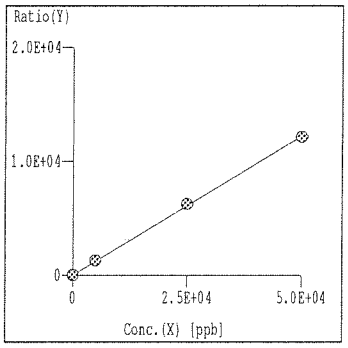
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.480E-001*X +6.776E-003
X = 2.232E+000*Y -1.513E-002
DL = 1.427E-02 ppb
BEC = 1.513E-02 ppb

Step Mass Element ISTD Unit
(3) 11 B 6 ppb



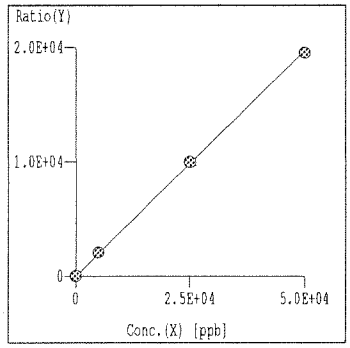
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.235E-001*X +1.294E+000
X = 3.092E+000*Y -4.000E+000
DL = 2.712E-01 ppb
BEC = 4.000 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



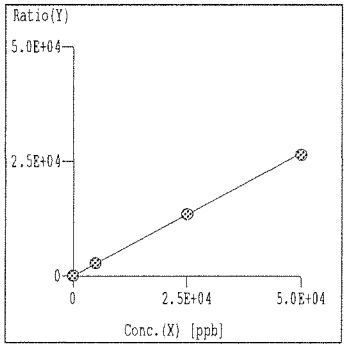
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.444E-001*X +3.671E+000
X = 4.092E+000*Y -1.502E+001
DL = 1.325 ppb
BEC = 15.02 ppb

Step Mass Element ISTD Unit
(3) 24 Mg 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 3.949E-001*X +4.250E-002
X = 2.532E+000*Y -1.076E-001
DL = 2.074E-02 ppb
BEC = 1.076E-01 ppb

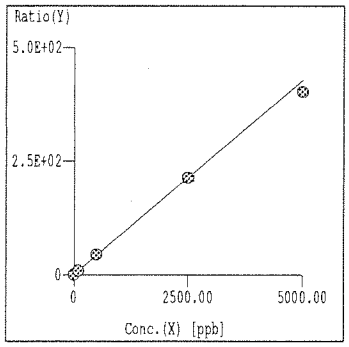
Step Mass Element ISTD Unit
(3) 27 Al 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.377E-001*X +2.675E-002
X = 1.860E+000*Y -4.976E-002
DL = 1.109E-02 ppb
BEC = 4.976E-02 ppb

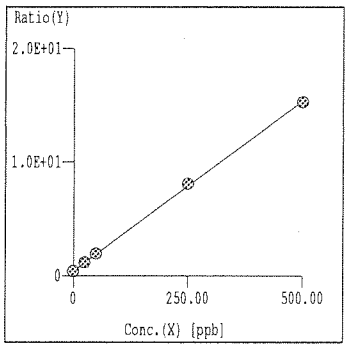
=== Graph Detail ===

Step Mass Element ISTD Unit
(1) 28 Si 45 ppb



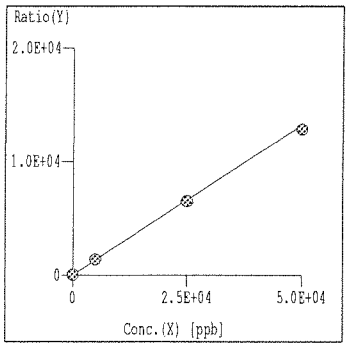
Curve Fit: Y=aX+b
r = 0.9996
Y = 8.552E-002*X +3.955E-001
X = 1.169E+001*Y -4.624E+000
DL = 4.291E-01 ppb
BEC = 4.624 ppb

Step Mass Element ISTD Unit
(3) 31 P 45 ppb



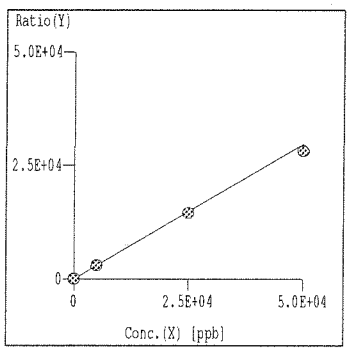
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.000E-002*X +4.049E-001
X = 3.333E+001*Y -1.349E+001
DL = 1.161 ppb
BEC = 13.49 ppb

Step Mass Element ISTD Unit
(2) 39 K 45 ppb



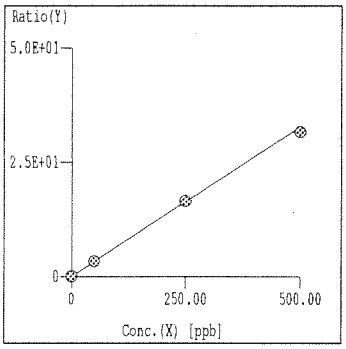
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.643E-001*X +1.350E+001
X = 3.784E+000*Y -5.110E+001
DL = 4.666E-01 ppb
BEC = 51.10 ppb

Step Mass Element ISTD Unit
(1) 40 Ca 45 ppb



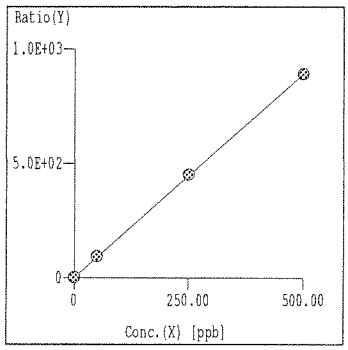
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.942E-001*X +7.701E-001
X = 1.683E+000*Y -1.296E+000
DL = 9.207E-02 ppb
BEC = 1.296 ppb

Step Mass Element ISTD Unit
(3) 47 Ti 45 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 6.567E-002*X +1.852E-003
X = 1.523E+001*Y -2.821E-002
DL = 2.995E-02 ppb
BEC = 2.821E-02 ppb

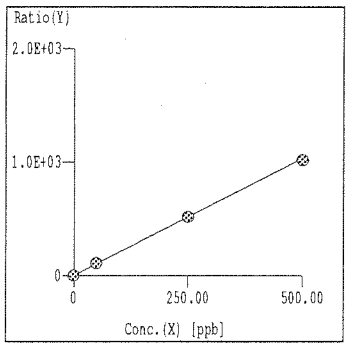
Step Mass Element ISTD Unit
(2) 51 V 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.783E+000*X +6.300E-001
X = 5.609E-001*Y -3.534E-001
DL = 2.271E-03 ppb
BEC = 3.534E-01 ppb

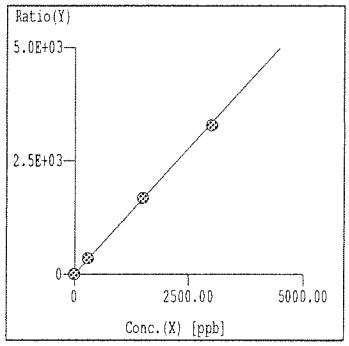
=== Graph Detail ===

Step Mass Element ISTD Unit
(2) 52 Cr 45 ppb



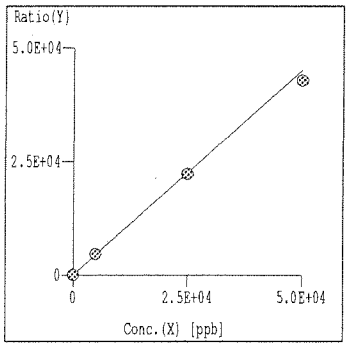
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.068E+000*X +2.189E-001
X = 4.835E-001*Y -1.059E-001
DL = 1.529E-02 ppb
BEC = 1.059E-01 ppb

Step Mass Element ISTD Unit
(3) 55 Mn 45 ppb



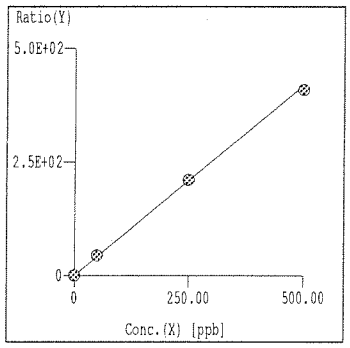
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.116E+000*X +4.917E-002
X = 8.958E-001*Y -4.404E-002
DL = 1.213E-02 ppb
BEC = 4.404E-02 ppb

Step Mass Element ISTD Unit
(1) 56 Fe 45 ppb



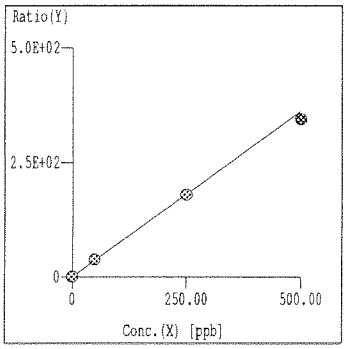
Curve Fit: Y=aX+b
r = 0.9998
Y = 9.033E-001*X +1.880E-001
X = 1.107E+000*Y -2.081E-001
DL = 1.638E-02 ppb
BEC = 2.081E-01 ppb

Step Mass Element ISTD Unit
(3) 59 Co 45 ppb



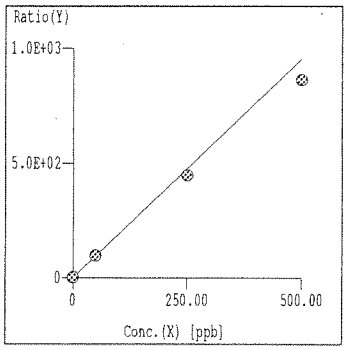
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.393E-001*X +9.466E-003
X = 1.192E+000*Y -1.128E-002
DL = 3.933E-03 ppb
BEC = 1.128E-02 ppb

Step Mass Element ISTD Unit
(2) 60 Ni 45 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 7.249E-001*X +1.588E-002
X = 1.380E+000*Y -2.190E-002
DL = 3.958E-03 ppb
BEC = 2.190E-02 ppb

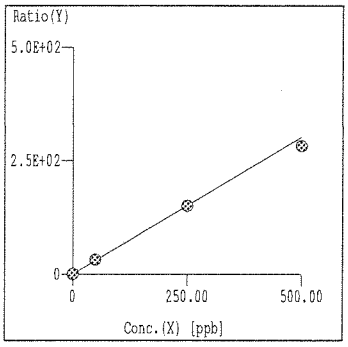
Step Mass Element ISTD Unit
(2) 63 Cu 45 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.910E+000*X +8.354E-002
X = 5.236E-001*Y -4.374E-002
DL = 4.607E-03 ppb
BEC = 4.374E-02 ppb

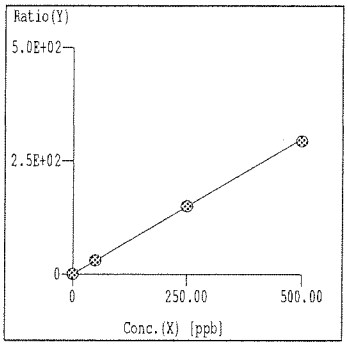
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 66 Zn 72 ppb



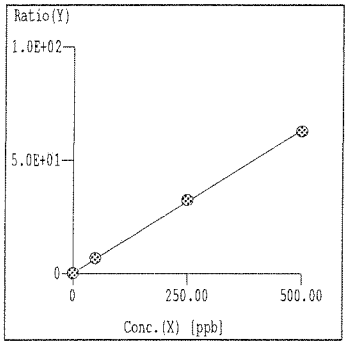
Curve Fit: Y=aX+b
r = 0.9995
Y = 6.041E-001*X +4.784E-002
X = 1.655E+000*Y -7.919E-002
DL = 4.783E-03 ppb
BEC = 7.919E-02 ppb

Step Mass Element ISTD Unit
(2) 75 As 72 ppb



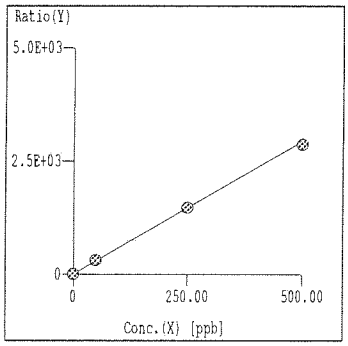
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.970E-001*X +4.043E-002
X = 1.675E+000*Y -6.772E-002
DL = 1.834E-02 ppb
BEC = 6.772E-02 ppb

Step Mass Element ISTD Unit
(1) 78 Se 72 ppb



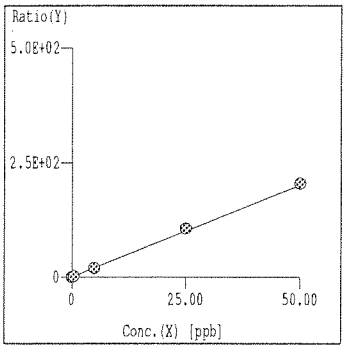
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.267E-001*X +6.901E-004
X = 7.895E+000*Y -5.448E-003
DL = 5.049E-03 ppb
BEC = 5.448E-03 ppb

Step Mass Element ISTD Unit
(3) 88 Sr 72 ppb



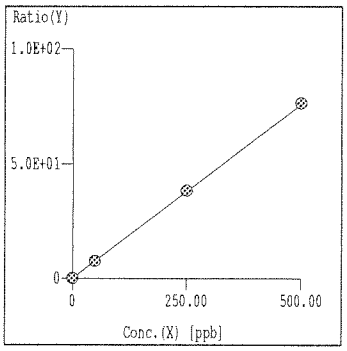
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.885E+000*X +1.266E-001
X = 1.699E-001*Y -2.152E-002
DL = 4.482E-03 ppb
BEC = 2.152E-02 ppb

Step Mass Element ISTD Unit
(3) 90 Zr 72 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 4.026E+000*X +3.602E-002
X = 2.484E-001*Y -8.945E-003
DL = 1.387E-03 ppb
BEC = 8.945E-03 ppb

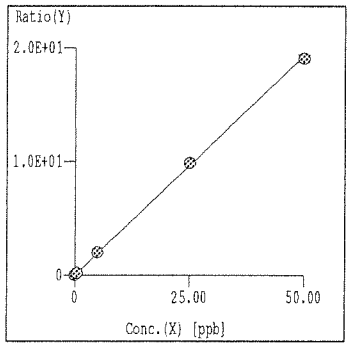
Step Mass Element ISTD Unit
(3) 95 Mo 115 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.520E-001*X +4.086E-004
X = 6.578E+000*Y -2.688E-003
DL = 5.604E-03 ppb
BEC = 2.688E-03 ppb

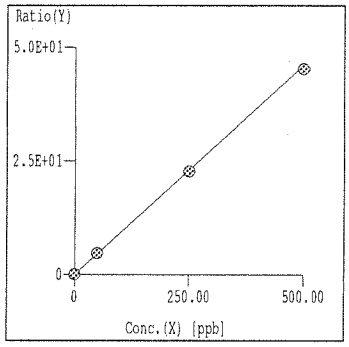
=== Graph Detail ===

Step Mass Element (3) 107 Ag — ISTD 115 — Unit ppb



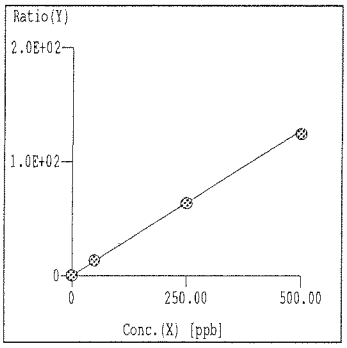
Curve Fit: Y=aX+b
r = 0.9998
Y = 3.869E-001*X +5.015E-004
X = 2.584E+000*Y -1.296E-003
DL = 1.141E-03 ppb
BEC = 1.296E-03 ppb

Step Mass Element (3) 111 Cd — ISTD 115 — Unit ppb



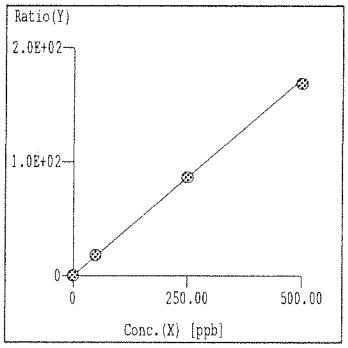
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.222E-002*X +2.206E-005
X = 1.084E+001*Y -2.392E-004
DL = 6.423E-03 ppb
BEC = 2.392E-04 ppb

Step Mass Element (3) 118 Sn — ISTD 115 — Unit ppb



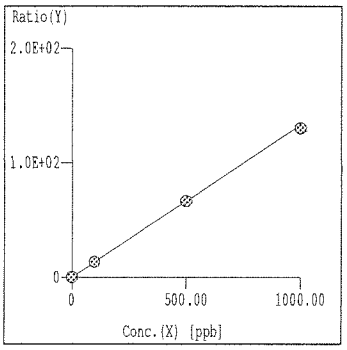
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.553E-001*X +1.135E-003
X = 3.917E+000*Y -4.444E-003
DL = 2.620E-03 ppb
BEC = 4.444E-03 ppb

Step Mass Element (3) 121 Sb — ISTD 115 — Unit ppb



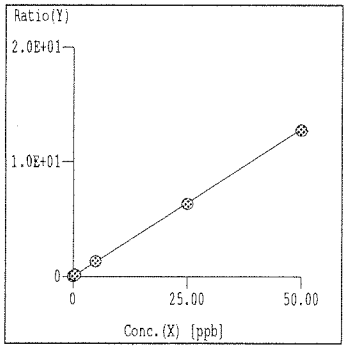
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.458E-001*X +1.303E-002
X = 2.892E+000*Y -3.767E-002
DL = 1.214E-02 ppb
BEC = 3.767E-02 ppb

Step Mass Element (3) 137 Ba — ISTD 115 — Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.330E-001*X +1.132E-003
X = 7.517E+000*Y -8.507E-003
DL = 6.952E-03 ppb
BEC = 8.507E-03 ppb

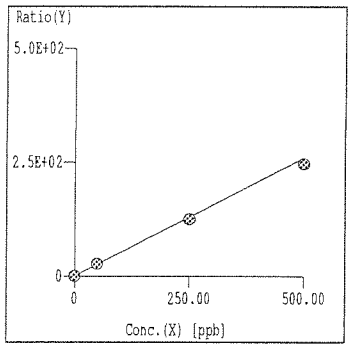
Step Mass Element (3) 182 W — ISTD 159 — Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.573E-001*X +1.389E-003
X = 3.887E+000*Y -5.397E-003
DL = 1.278E-03 ppb
BEC = 5.397E-03 ppb

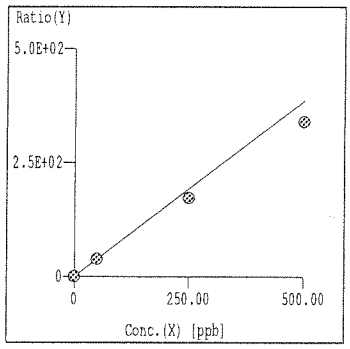
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



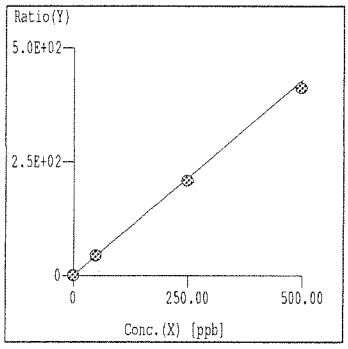
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.200E-001*X +1.413E-003
X = 1.923E+000*Y -2.718E-003
DL = 5.680E-04 ppb
BEC = 2.718E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 7.707E-001*X +5.225E-003
X = 1.297E+000*Y -6.779E-003
DL = 2.905E-03 ppb
BEC = 6.779E-03 ppb

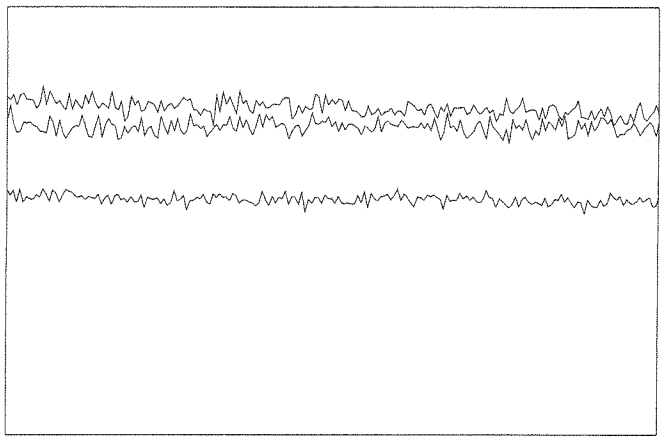
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 8.607E-001*X +2.258E-004
X = 1.162E+000*Y -2.624E-004
DL = 9.793E-05 ppb
BEC = 2.624E-04 ppb

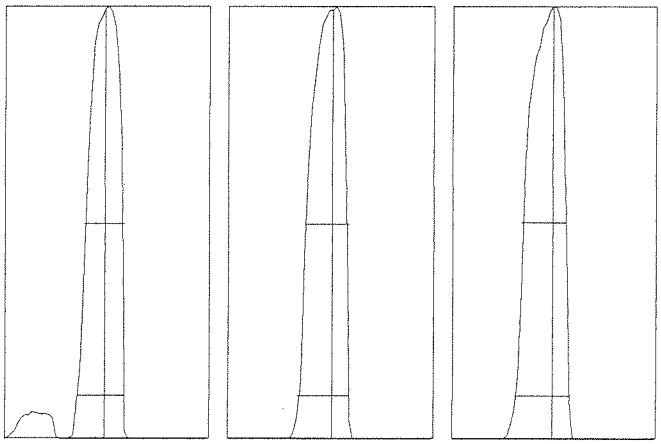
Tune Report

Tune File : NORM.U
Comment : IF6E04



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.561%
Doubly Charged:	70/140	0.816%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	14763.0	14420.5	2.20	1.40
89	100,000	56064.0	55221.8	2.03	2.10
205	50,000	37450.0	38308.8	2.31	8.70
156/140	5	1.598%	1.699%	4.40	
70/140	2	0.913%	0.889%	5.48	



m/z:	7	89	205
Height:	14,289	54,807	38,148
Axis:	7.00	89.05	205.00
W-50%:	0.60	0.65	0.65
W-10%:	0.700	0.7500	0.800

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : May 04, 2016 13:31:53
Printed : May 04, 2016 13:31:55

Tune Report

Tune File : NORM.U
Comment : IF6E04

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1.2 mm	Omega Lens-ce	:	1.6 V	Axis Offset	:	-0.02
Torch-V	:	-0.1 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.12 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2150 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1450 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

Generated : May 04, 2016 13:31:53
Printed : May 04, 2016 13:31:58

P/A Factor Tuning Report

Acquired:May 4 2016 01:35 pm

Mass [amu]	Element	P/A Factor
6	Li	0.065577
7	Li	0.068622
9	Be	Sensitivity too low
11	B	Sensitivity too low
23	Na	0.083024
24	Mg	0.086135
27	Al	0.088078
31	P	Sensitivity too low
39	K	0.088093
45	Sc	0.088648
47	Ti	Sensitivity too low
51	V	0.091858
52	Cr	0.094590
55	Mn	0.096249
56	Fe	0.094737
59	Co	0.100078
60	Ni	0.102918
63	Cu	0.104919
66	Zn	0.104784
72	Ge	0.103931
75	As	Sensitivity too low
78	Se	Sensitivity too low
88	Sr	0.101804
89	Y	Sensitivity too low
90	Zr	0.099819
95	Mo	0.101895
107	Ag	0.109354
111	Cd	0.109998
115	In	0.109714
118	Sn	0.108485
121	Sb	0.107950
137	Ba	0.108097
159	Tb	0.109755
182	W	0.109557
205	Tl	0.114148
208	Pb	0.113961
209	Bi	0.115052
235	U	Sensitivity too low
238	U	0.113359

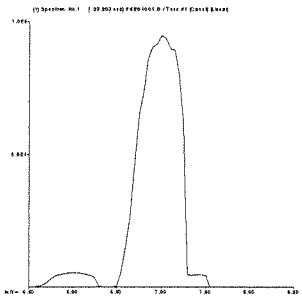
===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 2150 V
Pulse HV: 1450 V

6020 QC Tune Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04001.D
Date Acquired:	May 4 2016 03:10 pm
Acq. Method:	TN6020_C.M
Operator:	CCapul
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	1.39	5.00	
59 Co	0.49	5.00	
115 In	0.63	5.00	
205 Tl	1.75	5.00	



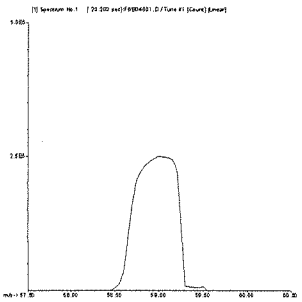
7 Li

Mass Calib.

Actual: 7.00
Required: 6.90 - 7.10
Flag:

Peak Width-10%

Actual: 0.65
Limit 0.90
Flag:



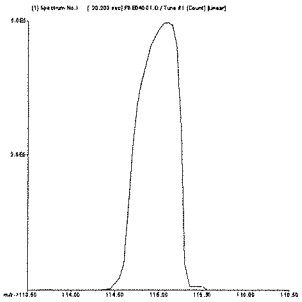
59 Co

Mass Calib.

Actual: 59.05
Required: 58.90 - 59.10
Flag:

Peak Width-10%

Actual: 0.65
Limit 0.90
Flag:



115 In

Mass Calib.

Actual: 115.05

Required: 114.90 - 115.10

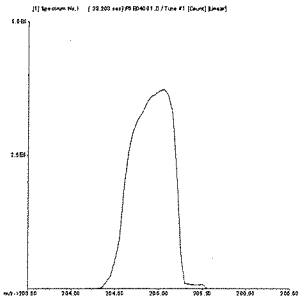
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04003
Date Acquired:	May 4 2016 03:18 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H
Last Cal Update:	May 04 2016 03:21 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	817784.31	A	3960.00	0.48
7	Li	55921.44	P	605.80	1.08
9	Be	62.22	P	10.18	16.36
11	B	12774.80	P	241.70	1.89
23	Na	51784.77	P	273.80	0.53
24	Mg	7134.20	P	408.90	5.73
27	Al	9285.84	P	423.10	4.56
28	Si	7029.71	P	56.02	0.80
31	P	10835.59	P	91.32	0.84
39	K	39364.46	P	533.70	1.36
40	Ca	68495.49	P	1130.00	1.65
45	Sc	1300421.00	A	28580.00	2.20
45	Sc	290455.09	P	3583.00	1.23
45	Sc	2669214.00	A	16080.00	0.60
47	Ti	61.11	P	25.24	41.30
51	V	1895.03	P	39.73	2.10
52	Cr	707.36	P	48.51	6.86
55	Mn	1856.86	P	196.80	10.60
56	Fe	10887.79	P	260.00	2.39
59	Co	274.46	P	34.21	12.47
60	Ni	64.45	P	6.71	10.41
63	Cu	1097.61	P	10.03	0.91
66	Zn	2383.62	P	32.15	1.35
72	Ge	377794.00	P	2726.00	0.72
72	Ge	160530.80	P	526.70	0.33
72	Ge	658571.13	P	6277.00	0.95
75	As	53.56	P	7.19	13.43
78	Se	4.00	P	1.33	33.33
88	Sr	761.16	P	52.11	6.85
90	Zr	270.01	P	66.67	24.69
95	Mo	44.45	P	6.94	15.61
107	Ag	31.11	P	16.44	52.84
111	Cd	3.01	P	17.04	565.21
115	In	4816801.00	A	35080.00	0.73
118	Sn	125.56	P	11.71	9.33
121	Sb	785.61	P	51.03	6.50
137	Ba	120.01	P	16.67	13.89
159	Tb	7027082.00	A	50480.00	0.72
182	W	92.23	P	6.94	7.52
205	Tl	148.90	P	26.74	17.96
208	Pb	821.16	P	37.17	4.53
209	Bi	4453077.00	A	7238.00	0.16
235	U	6.67	P	3.33	49.99
238	U	81.11	P	17.10	21.08

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04004
Date Acquired:	May 4 2016 03:23 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H
Last Cal Update:	May 04 2016 03:21 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	811155.50	A	11000.00	1.36
7	Li	54392.07	P	384.30	0.71
9	Be	54.45	P	16.44	30.20
11	B	10495.16	P	141.20	1.35
23	Na	45753.70	P	1849.00	4.04
24	Mg	1112.30	P	72.45	6.51
27	Al	701.16	P	52.32	7.46
28	Si	5107.75	P	105.90	2.07
31	P	10350.82	P	275.00	2.66
39	K	38075.56	P	348.90	0.92
40	Ca	9903.70	P	163.80	1.65
45	Sc	1299874.00	A	17580.00	1.35
45	Sc	282959.91	P	1884.00	0.67
45	Sc	2622763.00	A	7766.00	0.30
47	Ti	35.56	P	17.11	48.12
51	V	1780.79	P	8.11	0.46
52	Cr	593.57	P	30.01	5.06
55	Mn	1228.99	P	116.70	9.50
56	Fe	2442.51	P	96.98	3.97
59	Co	232.23	P	29.12	12.54
60	Ni	44.67	P	2.91	6.51
63	Cu	208.23	P	9.71	4.67
66	Zn	297.79	P	5.09	1.71
72	Ge	373453.69	P	4679.00	1.25
72	Ge	157911.91	P	859.80	0.54
72	Ge	650916.69	P	2603.00	0.40
75	As	63.56	P	5.67	8.92
78	Se	2.44	P	0.77	31.49
88	Sr	450.04	P	56.96	12.66
90	Zr	236.68	P	11.55	4.88
95	Mo	21.11	P	13.47	63.80
107	Ag	24.45	P	6.94	28.39
111	Cd	0.04	P	9.38	21649.00
115	In	4753398.00	A	14940.00	0.31
118	Sn	52.22	P	10.71	20.51
121	Sb	590.04	P	66.92	11.34
137	Ba	50.00	P	14.53	29.06
159	Tb	6916590.00	A	10190.00	0.15
182	W	95.56	P	7.70	8.06
205	Tl	96.67	P	6.67	6.90
208	Pb	348.91	P	51.25	14.69
209	Bi	4391718.00	A	35940.00	0.82
235	U	13.33	P	3.33	25.00
238	U	15.56	P	1.93	12.38

Calibration Standard QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04005.D\F6E04005.D#
Date Acquired: May 4 2016 03:27 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 04 2016 03:26 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	801793.50	A	12920.00	1.61
7 Li	58081.22	P	587.70	1.01
9 Be	1847.96	P	100.20	5.42
11 B	11586.00	P	167.90	1.45
23 Na	227491.70	P	898.80	0.40
24 Mg	573735.81	P	7789.00	1.36
27 Al	748799.13	P	8882.00	1.19
28 Si	119381.30	P	1110.00	0.93
31 P	30492.52	P	94.15	0.31
39 K	77342.26	P	211.20	0.27
40 Ca	439838.19	P	2746.00	0.62
45 Sc	1303268.00	A	20890.00	1.60
45 Sc	283527.31	P	902.30	0.32
45 Sc	2626824.00	A	23640.00	0.90
47 Ti	1038.96	P	59.29	5.71
51 V	4454.71	P	21.99	0.49
52 Cr	3637.14	P	44.74	1.23
55 Mn	18086.32	P	576.60	3.19
56 Fe	664223.63	P	4290.00	0.65
59 Co	12591.46	P	296.00	2.35
60 Ni	1182.50	P	56.03	4.74
63 Cu	3218.82	P	35.03	1.09
66 Zn	5318.96	P	51.69	0.97
72 Ge	366165.69	P	2114.00	0.58
72 Ge	158123.41	P	850.60	0.54
72 Ge	644580.19	P	2474.00	0.38
75 As	539.12	P	22.57	4.19
78 Se	250.00	P	10.09	4.04
88 Sr	21194.16	P	141.40	0.67
90 Zr	12604.91	P	251.20	1.99
95 Mo	3570.57	P	70.26	1.97
107 Ag	8807.51	P	199.20	2.26
111 Cd	2324.79	P	133.30	5.73
115 In	4749718.00	A	18270.00	0.38
118 Sn	6331.66	P	107.00	1.69
121 Sb	9291.18	P	235.00	2.53
137 Ba	3329.42	P	93.86	2.82
159 Tb	6919106.00	A	25780.00	0.37
182 W	9564.88	P	397.00	4.15
205 Tl	19824.48	P	212.10	1.07
208 Pb	27237.52	P	143.20	0.53
209 Bi	4391032.00	A	26420.00	0.60
235 U	235.57	P	20.37	8.65
238 U	30318.66	P	265.10	0.87

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	801793.50	1.61	811155.50	98.8	60 - 125	
45 Sc	1303268.40	1.60	1299874.00	100.3	60 - 125	
45 Sc	283527.28	0.32	282959.88	100.2	60 - 125	
45 Sc	2626824.30	0.90	2622763.00	100.2	60 - 125	
72 Ge	366165.66	0.58	373453.66	98.0	60 - 125	
72 Ge	158123.36	0.54	157911.92	100.1	60 - 125	
72 Ge	644580.19	0.38	650916.69	99.0	60 - 125	
115 In	4749718.00	0.38	4753398.50	99.9	60 - 125	
159 Tb	6919106.00	0.37	6916590.50	100.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04006.D\F6E04006.D#
Date Acquired:	May 4 2016 03:32 pm
Operator:	CCapul
Sample Name:	S2 50
Misc Info:	
Vial Number:	1105
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 04 2016 03:30 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	754503.13	A	13060.00	1.73
7 Li	93472.17	P	784.40	0.84
9 Be	17201.46	P	169.30	0.98
11 B	34800.35	P	746.10	2.14
23 Na	16427420.00	A	318400.00	1.94
24 Mg	52223512.00	A	1026000.00	1.96
27 Al	69748232.00	A	860600.00	1.23
28 Si	564653.69	P	1992.00	0.35
31 P	49292.26	P	860.00	1.74
39 K	3645945.00	A	21280.00	0.58
40 Ca	37637420.00	A	69960.00	0.19
45 Sc	1273775.00	A	8347.00	0.66
45 Sc	269872.00	P	2413.00	0.89
45 Sc	2550125.00	A	28120.00	1.10
47 Ti	84329.46	P	812.60	0.96
51 V	252876.09	P	970.80	0.38
52 Cr	292058.69	P	1012.00	0.35
55 Mn	8757457.00	A	98680.00	1.13
56 Fe	58597580.00	A	1004000.00	1.71
59 Co	1121221.00	A	6739.00	0.60
60 Ni	102299.30	P	618.00	0.60
63 Cu	259960.59	P	383.30	0.15
66 Zn	197042.09	P	1331.00	0.68
72 Ge	357919.31	P	1456.00	0.41
72 Ge	151503.41	P	523.80	0.35
72 Ge	623307.38	P	3460.00	0.56
75 As	45407.46	P	285.20	0.63
78 Se	23690.22	P	88.97	0.38
88 Sr	1905401.00	A	1519.00	0.08
90 Zr	121485.70	P	702.40	0.58
95 Mo	346757.50	P	814.00	0.23
107 Ag	91956.48	P	780.10	0.85
111 Cd	214407.59	P	1507.00	0.70
115 In	4590590.00	A	50590.00	1.10
118 Sn	602393.00	P	812.30	0.13
121 Sb	819075.00	P	2909.00	0.36
137 Ba	615920.13	P	3941.00	0.64
159 Tb	6726179.00	A	41970.00	0.62
182 W	87397.64	P	459.60	0.53
205 Tl	1801402.00	A	12790.00	0.71
208 Pb	2592392.00	A	16430.00	0.63
209 Bi	4155644.00	A	61160.00	1.47
235 U	21373.85	P	252.40	1.18
238 U	2911290.00	A	2348.00	0.08

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	754503.06	1.73	811155.50	93.0	60 - 125	
45 Sc	1273774.60	0.66	1299874.00	98.0	60 - 125	
45 Sc	269871.97	0.89	282959.88	95.4	60 - 125	
45 Sc	2550125.30	1.10	2622763.00	97.2	60 - 125	
72 Ge	357919.31	0.41	373453.66	95.8	60 - 125	
72 Ge	151503.39	0.35	157911.92	95.9	60 - 125	
72 Ge	623307.44	0.56	650916.69	95.8	60 - 125	
115 In	4590590.50	1.10	4753398.50	96.6	60 - 125	
159 Tb	6726179.50	0.62	6916590.50	97.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04007.D\F6E04007.D#
Date Acquired: May 4 2016 03:36 pm
Operator: CCapul
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 04 2016 03:34 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	734645.38	A	18630.00	2.54
7 Li	255153.00	P	2247.00	0.88
9 Be	83294.64	P	738.90	0.89
11 B	129684.50	P	1379.00	1.06
23 Na	77205968.00	A	640200.00	0.83
24 Mg	253997700.00	A	4380000.00	1.72
27 Al	342956990.00	A	2939000.00	0.86
28 Si	2630459.00	A	19280.00	0.73
31 P	205903.59	P	1057.00	0.51
39 K	17490560.00	A	150900.00	0.86
40 Ca	178887300.00	A	1311000.00	0.73
45 Sc	1235859.00	A	34440.00	2.79
45 Sc	270210.50	P	3125.00	1.16
45 Sc	2548861.00	A	30710.00	1.20
47 Ti	420024.81	P	3213.00	0.76
51 V	1218443.00	A	10080.00	0.83
52 Cr	1394332.00	A	14150.00	1.01
55 Mn	42691672.00	A	490600.00	1.15
56 Fe	275097790.00	A	4175000.00	1.52
59 Co	5365713.00	A	25610.00	0.48
60 Ni	484631.50	P	2165.00	0.45
63 Cu	1206949.00	A	9189.00	0.76
66 Zn	937417.31	P	5195.00	0.55
72 Ge	345786.31	P	3661.00	1.06
72 Ge	148436.30	P	750.20	0.51
72 Ge	624543.88	P	5068.00	0.81
75 As	221776.50	P	609.60	0.27
78 Se	111654.70	P	970.20	0.87
88 Sr	9169213.00	A	82870.00	0.90
90 Zr	659032.31	P	3204.00	0.49
95 Mo	1690615.00	A	11200.00	0.66
107 Ag	434625.00	P	3708.00	0.85
111 Cd	999791.88	A	6345.00	0.63
115 In	4407859.00	A	26250.00	0.60
118 Sn	2787544.00	A	13470.00	0.48
121 Sb	3798395.00	A	20020.00	0.53
137 Ba	2921121.00	A	38310.00	1.31
159 Tb	6638473.00	A	117900.00	1.78
182 W	419461.81	P	4483.00	1.07
205 Tl	8296354.00	A	26120.00	0.31
208 Pb	11454640.00	A	111300.00	0.97
209 Bi	3931951.00	A	14840.00	0.38
235 U	103067.30	P	1315.00	1.28
238 U	13805850.00	A	60520.00	0.44

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	734645.38	2.54	811155.50	90.6	60 - 125	
45 Sc	1235859.10	2.79	1299874.00	95.1	60 - 125	
45 Sc	270210.47	1.16	282959.88	95.5	60 - 125	
45 Sc	2548860.50	1.20	2622763.00	97.2	60 - 125	
72 Ge	345786.34	1.06	373453.66	92.6	60 - 125	
72 Ge	148436.31	0.51	157911.92	94.0	60 - 125	
72 Ge	624543.88	0.81	650916.69	95.9	60 - 125	
115 In	4407859.50	0.60	4753398.50	92.7	60 - 125	
159 Tb	6638473.00	1.78	6916590.50	96.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04008.D\F6E04008.D#
Date Acquired:	May 4 2016 03:40 pm
Operator:	CCapul
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 04 2016 03:38 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	744427.69	A	9408.00	1.26
7 Li	454463.09	P	6130.00	1.35
9 Be	164727.80	P	1430.00	0.87
11 B	248282.50	P	1506.00	0.61
23 Na	158094800.00	A	1782000.00	1.13
24 Mg	513922210.00	A	3924000.00	0.76
27 Al	695316990.00	A	2409000.00	0.35
28 Si	5239527.00	A	20190.00	0.39
31 P	402190.69	P	1295.00	0.32
39 K	35711260.00	A	593800.00	1.66
40 Ca	366570400.00	A	2723000.00	0.74
45 Sc	1303583.00	A	19670.00	1.51
45 Sc	278883.50	P	2458.00	0.88
45 Sc	2633509.00	A	7097.00	0.27
47 Ti	833211.88	A	8189.00	0.98
51 V	2484453.00	A	24500.00	0.99
52 Cr	2835597.00	A	31830.00	1.12
55 Mn	86424016.00	A	710000.00	0.82
56 Fe	557756420.00	A	1779000.00	0.32
59 Co	10768750.00	A	65810.00	0.61
60 Ni	959124.31	M	12430.00	1.30
63 Cu	2404496.00	A	13100.00	0.54
66 Zn	1808026.00	A	8271.00	0.46
72 Ge	352302.19	P	2784.00	0.79
72 Ge	152851.20	P	2096.00	1.37
72 Ge	642168.13	P	3763.00	0.59
75 As	447039.81	P	2317.00	0.52
78 Se	220779.09	P	1914.00	0.87
88 Sr	18390890.00	A	127000.00	0.69
90 Zr	1313345.00	A	10800.00	0.82
95 Mo	3324728.00	A	13220.00	0.40
107 Ag	829116.63	P	3512.00	0.42
111 Cd	1967186.00	A	15320.00	0.78
115 In	4351342.00	A	54380.00	1.25
118 Sn	5404765.00	A	37770.00	0.70
121 Sb	7335225.00	A	11040.00	0.15
137 Ba	5649204.00	A	34510.00	0.61
159 Tb	6438828.00	A	32530.00	0.51
182 W	819021.00	P	5251.00	0.64
205 Tl	15835870.00	A	75990.00	0.48
208 Pb	21874670.00	A	159700.00	0.73
209 Bi	3751198.00	A	2308.00	0.06
235 U	199592.09	P	2280.00	1.14
238 U	26539950.00	A	172900.00	0.65

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	744427.75	1.26	811155.50	91.8	60 - 125	
45 Sc	1303582.60	1.51	1299874.00	100.3	60 - 125	
45 Sc	278883.50	0.88	282959.88	98.6	60 - 125	
45 Sc	2633508.50	0.27	2622763.00	100.4	60 - 125	
72 Ge	352302.19	0.79	373453.66	94.3	60 - 125	
72 Ge	152851.23	1.37	157911.92	96.8	60 - 125	
72 Ge	642168.13	0.59	650916.69	98.7	60 - 125	
115 In	4351342.00	1.25	4753398.50	91.5	60 - 125	
159 Tb	6438828.00	0.51	6916590.50	93.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04009.D\F6E04009.D#
Date Acquired:	May 4 2016 03:44 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	32.13	ppb	299003.5	0.33	30.00	90 - 110	
9 Be	32.30	ppb	103803.5	1.42	30.00	90 - 110	
11 B	31.65	ppb	82665.7	2.88	30.00	90 - 110	
23 Na	30420.00	ppb	95275856.0	0.63	30000.00	90 - 110	
24 Mg	29730.00	ppb	303341700.0	2.06	30000.00	90 - 110	
27 Al	29660.00	ppb	411934110.0	1.46	30000.00	90 - 110	
28 Si	3097.00	ppb	3398255.0	0.72	3000.00	90 - 110	
31 P	293.50	ppb	237936.3	0.85	300.00	90 - 110	
39 K	30130.00	ppb	21507860.0	0.44	30000.00	90 - 110	
40 Ca	30360.00	ppb	231142800.0	0.97	30000.00	90 - 110	
47 Ti	294.70	ppb	499966.1	0.37	300.00	90 - 110	
51 V	307.20	ppb	1478365.0	1.92	300.00	90 - 110	
52 Cr	306.60	ppb	1709973.0	2.09	300.00	90 - 110	
55 Mn	1917.00	ppb	55290700.0	0.95	2000.00	90 - 110	
56 Fe	29850.00	ppb	345473790.0	0.60	30000.00	90 - 110	
59 Co	285.30	ppb	6184868.0	0.51	300.00	90 - 110	
60 Ni	294.30	ppb	575167.5	1.59	300.00	90 - 110	
63 Cu	276.90	ppb	1426444.0	0.51	300.00	90 - 110	
66 Zn	291.80	ppb	1079103.0	0.86	300.00	90 - 110	
75 As	299.90	ppb	266185.9	0.04	300.00	90 - 110	
78 Se	308.90	ppb	137731.7	0.29	300.00	90 - 110	
88 Sr	302.90	ppb	10909330.0	0.69	300.00	90 - 110	
90 Zr	28.39	ppb	699803.1	1.27	30.00	90 - 110	
95 Mo	300.30	ppb	1956886.0	1.08	300.00	90 - 110	
107 Ag	32.63	ppb	541197.5	1.25	30.00	90 - 110	
111 Cd	297.70	ppb	1176661.0	1.35	300.00	90 - 110	
118 Sn	303.80	ppb	3324124.0	1.07	300.00	90 - 110	
121 Sb	304.70	ppb	4517548.0	1.16	300.00	90 - 110	
137 Ba	313.10	ppb	1785414.0	1.70	300.00	90 - 110	
182 W	26.91	ppb	448236.6	1.36	30.00	90 - 110	Fail
205 Tl	287.10	ppb	9662630.0	1.62	300.00	90 - 110	
208 Pb	264.50	ppb	13193090.0	1.49	300.00	90 - 110	Fail
235 U	1.99	ppb	118353.9	1.68	2.20	90 - 110	
238 U	284.10	ppb	15826980.0	0.69	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	717031.3	1.72	811155.50	88.4	60 - 125	
45 Sc	1281163.3	0.58	1299874.00	98.6	60 - 125	
45 Sc	269635.5	0.87	282959.88	95.3	60 - 125	
45 Sc	2583349.3	0.54	2622763.00	98.5	60 - 125	
72 Ge	352006.6	0.96	373453.66	94.3	60 - 125	
72 Ge	148630.7	0.92	157911.92	94.1	60 - 125	
72 Ge	611949.1	0.76	650916.69	94.0	60 - 125	
115 In	4286656.0	0.93	4753398.50	90.2	60 - 125	
159 Tb	6473009.5	1.04	6916590.50	93.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04010.D\F6E04010.D#
Date Acquired:	May 4 2016 03:48 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0285	ppb	51023.9	113.71	0.20	
9 Be	0.0008	ppb	54.4	305.48	0.10	
11 B	-0.7632	ppb	7990.2	9.43	5.00	
23 Na	0.2115	ppb	48453.4	28.05	40.00	
24 Mg	0.2984	ppb	4173.0	10.68	10.00	
27 Al	0.2082	ppb	3609.5	13.53	20.00	
28 Si	1.1970	ppb	6478.3	21.84	20.00	
31 P	-2.2160	ppb	8806.4	24.37	10.00	
39 K	-1.6580	ppb	37208.0	8.03	20.00	
40 Ca	0.8462	ppb	16566.7	3.01	25.00	
47 Ti	0.0101	ppb	65.6	47.10	0.50	
51 V	-0.0206	ppb	1689.7	29.57	0.50	
52 Cr	-0.0111	ppb	558.0	55.40	0.20	
55 Mn	0.0302	ppb	2155.8	19.34	0.20	
56 Fe	2.6660	ppb	33787.1	9.77	10.00	
59 Co	0.0013	ppb	275.6	103.75	0.20	
60 Ni	0.0078	ppb	61.3	18.37	0.20	
63 Cu	0.0099	ppb	291.6	20.58	0.40	
66 Zn	0.0307	ppb	434.5	53.95	2.00	
75 As	0.0245	ppb	88.2	24.01	0.20	
78 Se	0.0782	ppb	40.2	15.01	0.20	
90 Zr	0.0059	ppb	391.1	30.46	2.00	
95 Mo	0.1074	ppb	812.3	23.93	0.40	
107 Ag	0.0006	ppb	35.6	45.74	0.20	
111 Cd	0.0016	ppb	8.2	199.50	0.20	
118 Sn	0.0648	ppb	857.8	2.73	0.20	
121 Sb	0.0962	ppb	2244.7	8.44	0.40	
137 Ba	0.0037	ppb	78.9	82.11	0.20	
182 W	0.0268	ppb	580.0	4.05	1.00	
205 Tl	0.0207	ppb	852.3	10.52	0.20	
208 Pb	0.0065	ppb	714.5	16.77	0.10	
235 U	0.0001	ppb	17.8	88.29	1.00	
238 U	0.0169	ppb	1033.4	11.26	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	763091.9	0.21	811155.50	94.1	60 - 125	
45 Sc	1301442.4	0.84	1299874.00	100.1	60 - 125	
45 Sc	284783.2	0.66	282959.88	100.6	60 - 125	
45 Sc	2602709.3	0.35	2622763.00	99.2	60 - 125	
72 Ge	379836.7	0.54	373453.66	101.7	60 - 125	
72 Ge	160310.3	0.36	157911.92	101.5	60 - 125	
72 Ge	654926.0	0.50	650916.69	100.6	60 - 125	
115 In	4849540.5	0.33	4753398.50	102.0	60 - 125	
159 Tb	7004840.5	0.20	6916590.50	101.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04011.D\F6E04011.D#
Date Acquired:	May 4 2016 03:52 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE0401
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	53510.3	0.0000	0.5020	ppb	21.93	50.00	
9 Be	# 3	6	1657.9	0.0000	0.4872	ppb	4.80	50.00	
11 B	# 3	6	8607.3	0.0000	-0.3880	ppb	40.64	100.00	
23 Na	# 1	45	212508.7	0.0000	52.7700	ppb	0.63	50000.00	
24 Mg	# 3	45	538628.3	0.0000	52.1600	ppb	1.82	50000.00	
27 Al	# 3	45	714642.7	0.0000	50.8900	ppb	2.69	50000.00	
28 Si	# 1	45	4135.2	0.0000	-0.8543	ppb	8.12	5000.00	
31 P	# 3	45	8941.0	0.0000	-2.0770	ppb	14.15	500.00	
39 K	# 2	45	74873.3	0.0000	50.9800	ppb	1.09	50000.00	
40 Ca	# 1	45	399908.8	0.0000	51.1700	ppb	0.33	50000.00	
47 Ti	# 3	45	856.7	0.0000	0.4716	ppb	0.89	500.00	
51 V	# 2	45	4190.4	0.0000	0.4936	ppb	2.53	500.00	
52 Cr	# 2	45	3479.3	0.0000	0.5003	ppb	1.55	500.00	
55 Mn	# 3	45	17524.6	0.0000	0.5575	ppb	1.41	3000.00	
56 Fe	# 1	45	636884.3	0.0000	54.7600	ppb	0.93	50000.00	
59 Co	# 3	45	12568.1	0.0000	0.5626	ppb	2.15	500.00	
60 Ni	# 2	45	1129.6	0.0000	0.5397	ppb	5.13	500.00	
63 Cu	# 2	45	3045.2	0.0000	0.5308	ppb	2.23	500.00	
66 Zn	# 3	72	17774.9	0.0000	4.4360	ppb	1.28	500.00	
75 As	# 2	72	538.0	0.0000	0.4997	ppb	6.80	500.00	
78 Se	# 1	72	259.8	0.0000	0.5479	ppb	11.62	500.00	
88 Sr	# 3	72	20536.7	0.0000	0.5139	ppb	1.35	500.00	
90 Zr	# 3	72	284.5	0.0000	0.0019	ppb	76.99	50.00	
95 Mo	# 3	115	3787.3	0.0000	0.5185	ppb	3.65	500.00	
107 Ag	# 3	115	9634.8	0.0000	0.5198	ppb	3.31	50.00	
111 Cd	# 3	115	2182.5	0.0000	0.4949	ppb	1.94	500.00	
118 Sn	# 3	115	6526.2	0.0000	0.5304	ppb	2.41	500.00	
121 Sb	# 3	115	9988.4	0.0000	0.5666	ppb	0.98	500.00	
137 Ba	# 3	115	3409.4	0.0000	0.5278	ppb	3.03	1000.00	
182 W	# 3	159	326.7	0.0000	0.0125	ppb	10.37	50.00	
205 Tl	# 3	159	19230.2	0.0000	0.5182	ppb	1.55	500.00	
208 Pb	# 3	159	26706.1	0.0000	0.4813	ppb	1.17	500.00	
235 U	# 3	159	226.7	0.0000	0.0033	ppb	2.58	30.00	
238 U	# 3	159	29876.8	0.0000	0.4887	ppb	0.64	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	736615.06	0.18	811155.50	90.8	60 - 125	
45 Sc # 1	1282698.30	0.98	1299874.00	98.7	60 - 125	
45 Sc # 2	277545.53	0.91	282959.88	98.1	60 - 125	
45 Sc # 3	2610229.80	1.87	2622763.00	99.5	60 - 125	
72 Ge # 1	370542.53	1.05	373453.66	99.2	60 - 125	
72 Ge # 2	158839.59	0.94	157911.92	100.6	60 - 125	
72 Ge # 3	651696.50	0.36	650916.69	100.1	60 - 125	
115 In # 3	4779460.00	0.86	4753398.50	100.5	60 - 125	
159 Tb # 3	7099537.50	0.19	6916590.50	102.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04012.D\F6E04012.D#
Date Acquired:	May 4 2016 03:56 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.71	ppb	48481.6	4.54	---	
9 Be	0.00	ppb	54.4	54.35	---	
11 B	0.11	ppb	8601.6	13.62	---	
23 Na	99330.00	ppb	282219490.0	1.44	120000.00	
24 Mg	97850.00	ppb	915036290.0	0.46	120000.00	
27 Al	97490.00	ppb	1241083000.0	1.65	120000.00	
28 Si	4.90	ppb	9466.8	6.08	---	
31 P	102200.00	ppb	72587584.0	1.41	---	
39 K	96520.00	ppb	67070048.0	0.25	120000.00	
40 Ca	95720.00	ppb	661145470.0	3.42	120000.00	
47 Ti	2098.00	ppb	3262478.0	0.81	2400.00	
51 V	0.02	ppb	1734.1	85.09	---	
52 Cr	1.29	ppb	7582.5	0.94	---	
55 Mn	0.35	ppb	10441.9	2.96	---	
56 Fe	95720.00	ppb	1005096000.0	1.38	120000.00	
59 Co	0.29	ppb	5900.3	1.01	---	
60 Ni	0.20	ppb	418.9	7.27	---	
63 Cu	0.96	ppb	5022.5	2.79	---	
66 Zn	2.34	ppb	8923.1	3.37	---	
75 As	0.17	ppb	203.8	3.44	---	
78 Se	0.07	ppb	32.0	14.92	---	
88 Sr	0.66	ppb	24537.4	1.04	---	
90 Zr	0.18	ppb	4625.4	7.92	---	
95 Mo	2025.00	ppb	12354340.0	0.96	2400.00	
107 Ag	0.02	ppb	370.0	9.06	---	
111 Cd	0.26	ppb	959.1	12.28	---	
118 Sn	0.05	ppb	530.0	1.98	---	
121 Sb	0.13	ppb	2387.0	6.14	---	
137 Ba	0.10	ppb	603.4	4.95	---	
182 W	0.13	ppb	2111.4	2.34	---	
205 Tl	0.01	ppb	290.0	13.99	---	
208 Pb	0.20	ppb	9512.8	2.08	---	
235 U	0.00	ppb	16.7	169.47	---	
238 U	0.01	ppb	345.6	5.80	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	647177.0	1.23	811155.50	79.8	60 - 125	
45 Sc	1162649.8	1.83	1299874.00	89.4	60 - 125	
45 Sc	262799.0	1.29	282959.88	92.9	60 - 125	
45 Sc	2368151.8	1.60	2622763.00	90.3	60 - 125	
72 Ge	323953.1	0.69	373453.66	86.7	60 - 125	
72 Ge	144301.2	0.70	157911.92	91.4	60 - 125	
72 Ge	611044.1	0.35	650916.69	93.9	60 - 125	
115 In	4013400.0	0.42	4753398.50	84.4	60 - 125	
159 Tb	5996444.5	0.80	6916590.50	86.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04013.D\F6E04013.D#
Date Acquired:	May 4 2016 04:01 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.17	ppb	189221.9	0.92	20.00	80 - 120	
9 Be	20.20	ppb	59729.4	2.43	20.00	80 - 120	
11 B	19.22	ppb	49535.2	2.49	20.00	80 - 120	
23 Na	98940.00	ppb	297960990.0	0.89	100000.00	80 - 120	
24 Mg	96530.00	ppb	929860420.0	1.23	100000.00	80 - 120	
27 Al	95840.00	ppb	1257152000.0	0.28	100000.00	80 - 120	
28 Si	202.90	ppb	218699.0	1.46	200.00	80 - 120	
31 P	100100.00	ppb	73310800.0	0.75	100000.00	80 - 120	
39 K	96890.00	ppb	68172160.0	1.13	100000.00	80 - 120	
40 Ca	95260.00	ppb	697525380.0	0.47	100000.00	80 - 120	
47 Ti	2078.00	ppb	3328840.0	0.77	2000.00	80 - 120	
51 V	20.68	ppb	99786.5	0.07	20.00	80 - 120	
52 Cr	21.04	ppb	116372.2	0.15	20.00	80 - 120	
55 Mn	20.87	ppb	569569.2	1.61	20.00	80 - 120	
56 Fe	94220.00	ppb	1048647000.0	0.94	100000.00	80 - 120	
59 Co	20.96	ppb	429379.4	1.17	20.00	80 - 120	
60 Ni	19.08	ppb	36844.0	0.22	20.00	80 - 120	
63 Cu	18.53	ppb	94395.1	0.24	20.00	80 - 120	
66 Zn	21.18	ppb	79113.0	0.34	20.00	80 - 120	
75 As	20.63	ppb	18184.4	0.94	20.00	80 - 120	
78 Se	22.37	ppb	9606.8	0.41	20.00	80 - 120	
88 Sr	20.73	ppb	752490.0	0.47	20.00	80 - 120	
90 Zr	9.22	ppb	228812.9	0.78	20.00	80 - 120	Fail
95 Mo	2034.00	ppb	12539060.0	1.14	2000.00	80 - 120	
107 Ag	19.56	ppb	306918.1	1.22	20.00	80 - 120	
111 Cd	20.16	ppb	75408.8	0.69	20.00	80 - 120	
118 Sn	20.31	ppb	210336.2	1.62	20.00	80 - 120	
121 Sb	21.22	ppb	298176.3	1.01	20.00	80 - 120	
137 Ba	20.67	ppb	111539.0	0.96	20.00	80 - 120	
182 W	19.06	ppb	300933.8	0.40	20.00	80 - 120	
205 Tl	19.87	ppb	634148.7	0.79	20.00	80 - 120	
208 Pb	18.03	ppb	852778.4	1.61	20.00	80 - 120	
235 U	0.13	ppb	7446.9	0.81	0.14	80 - 120	
238 U	19.44	ppb	1026350.0	2.01	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	659686.0	1.14	811155.50	81.3	60 - 125	
45 Sc	1232265.3	1.37	1299874.00	94.8	60 - 125	
45 Sc	266097.3	0.22	282959.88	94.0	60 - 125	
45 Sc	2439585.0	1.13	2622763.00	93.0	60 - 125	
72 Ge	338881.4	0.52	373453.66	90.7	60 - 125	
72 Ge	147175.2	0.29	157911.92	93.2	60 - 125	
72 Ge	615989.5	0.25	650916.69	94.6	60 - 125	
115 In	4055765.3	0.97	4753398.50	85.3	60 - 125	
159 Tb	6135498.5	1.05	6916590.50	88.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04014.D\F6E04014.D#
Date Acquired: May 4 2016 04:05 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: MRLE0402
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	60198.1	0.0000	1.0290	ppb	9.42	50.00	
9 Be	# 3	6	3472.7	0.0000	0.9943	ppb	3.72	50.00	
11 B	# 3	6	33899.6	0.0000	9.6470	ppb	2.79	100.00	
23 Na	# 1	45	424310.4	0.0000	113.8000	ppb	0.97	50000.00	
24 Mg	# 3	45	1149814.0	0.0000	108.4000	ppb	1.15	50000.00	
27 Al	# 3	45	1486958.0	0.0000	103.0000	ppb	1.57	50000.00	
28 Si	# 1	45	3784.0	0.0000	-1.3410	ppb	4.95	5000.00	
31 P	# 3	45	10588.4	0.0000	-0.3422	ppb	183.58	500.00	
39 K	# 2	45	120949.7	0.0000	105.0000	ppb	1.27	50000.00	
40 Ca	# 1	45	842554.9	0.0000	103.9000	ppb	0.67	50000.00	
47 Ti	# 3	45	1968.0	0.0000	1.0890	ppb	1.75	500.00	
51 V	# 2	45	7055.3	0.0000	0.9965	ppb	0.73	500.00	
52 Cr	# 2	45	6808.7	0.0000	1.0170	ppb	2.04	500.00	
55 Mn	# 3	45	34690.2	0.0000	1.1140	ppb	1.38	3000.00	
56 Fe	# 1	45	1370769.0	0.0000	112.4000	ppb	1.14	50000.00	
59 Co	# 3	45	25751.4	0.0000	1.1320	ppb	0.97	500.00	
60 Ni	# 2	45	2279.1	0.0000	1.0500	ppb	0.91	500.00	
63 Cu	# 2	45	6050.4	0.0000	1.0370	ppb	1.06	500.00	
66 Zn	# 3	72	43399.2	0.0000	10.8000	ppb	1.48	500.00	
75 As	# 2	72	1022.9	0.0000	0.9886	ppb	2.12	500.00	
78 Se	# 1	72	489.8	0.0000	1.0100	ppb	3.20	500.00	
88 Sr	# 3	72	84925.8	0.0000	2.1640	ppb	1.37	500.00	
90 Zr	# 3	72	454.5	0.0000	0.0081	ppb	6.18	50.00	
95 Mo	# 3	115	10895.7	0.0000	1.4620	ppb	4.78	500.00	
107 Ag	# 3	115	19573.1	0.0000	1.0330	ppb	2.63	50.00	
111 Cd	# 3	115	4407.2	0.0000	0.9766	ppb	1.76	500.00	
118 Sn	# 3	115	12781.9	0.0000	1.0190	ppb	0.66	500.00	
121 Sb	# 3	115	18645.3	0.0000	1.0640	ppb	1.45	500.00	
137 Ba	# 3	115	6624.0	0.0000	1.0090	ppb	3.24	1000.00	
182 W	# 3	159	243.3	0.0000	0.0081	ppb	13.03	50.00	
205 Tl	# 3	159	38968.5	0.0000	1.0650	ppb	1.91	500.00	
208 Pb	# 3	159	54701.0	0.0000	1.0040	ppb	0.80	500.00	
235 U	# 3	159	425.6	0.0000	0.0064	ppb	3.33	30.00	
238 U	# 3	159	59523.5	0.0000	0.9852	ppb	1.19	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	768106.13	1.45	811155.50	94.7	60 - 125	
45 Sc # 1	1348061.80	0.69	1299874.00	103.7	60 - 125	
45 Sc # 2	293185.53	0.24	282959.88	103.6	60 - 125	
45 Sc # 3	2682876.50	0.39	2622763.00	102.3	60 - 125	
72 Ge # 1	380632.31	0.42	373453.66	101.9	60 - 125	
72 Ge # 2	162223.22	0.32	157911.92	102.7	60 - 125	
72 Ge # 3	660299.81	0.13	650916.69	101.4	60 - 125	
115 In # 3	4892313.50	0.61	4753398.50	102.9	60 - 125	
159 Tb # 3	7018100.50	0.91	6916590.50	101.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04015.D\F6E04015.D#
Date Acquired: May 4 2016 04:10 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 04 2016 03:42 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.75 ppb	0.97	25.00	90 - 110	
9 Be	25.30 ppb	3.56	25.00	90 - 110	
11 B	51.15 ppb	4.05	50.00	90 - 110	
23 Na	25050.00 ppb	2.26	25000.00	90 - 110	
24 Mg	25260.00 ppb	2.13	25000.00	90 - 110	
27 Al	24890.00 ppb	2.65	25000.00	90 - 110	
28 Si	2420.00 ppb	1.57	2500.00	90 - 110	
31 P	251.70 ppb	1.98	250.00	90 - 110	
39 K	24680.00 ppb	1.15	25000.00	90 - 110	
40 Ca	24320.00 ppb	1.51	25000.00	90 - 110	
47 Ti	249.40 ppb	0.41	250.00	90 - 110	
51 V	250.60 ppb	0.35	250.00	90 - 110	
52 Cr	246.00 ppb	0.26	250.00	90 - 110	
55 Mn	1509.00 ppb	1.58	1500.00	90 - 110	
56 Fe	24530.00 ppb	0.73	25000.00	90 - 110	
59 Co	252.80 ppb	2.20	250.00	90 - 110	
60 Ni	241.40 ppb	1.76	250.00	90 - 110	
63 Cu	230.60 ppb	0.85	250.00	90 - 110	
66 Zn	246.90 ppb	1.80	250.00	90 - 110	
75 As	246.40 ppb	0.48	250.00	90 - 110	
78 Se	253.70 ppb	0.36	250.00	90 - 110	
88 Sr	246.10 ppb	1.38	250.00	90 - 110	
90 Zr	24.67 ppb	1.31	25.00	90 - 110	
95 Mo	258.10 ppb	0.24	250.00	90 - 110	
107 Ag	25.44 ppb	0.85	25.00	90 - 110	
111 Cd	247.90 ppb	0.80	250.00	90 - 110	
118 Sn	248.30 ppb	0.39	250.00	90 - 110	
121 Sb	249.20 ppb	0.34	250.00	90 - 110	
137 Ba	509.00 ppb	0.75	500.00	90 - 110	
182 W	23.92 ppb	0.21	25.00	90 - 110	
205 Tl	233.20 ppb	0.04	250.00	90 - 110	
208 Pb	220.00 ppb	0.87	250.00	90 - 110	Fail
235 U	1.66 ppb	0.78	1.80	90 - 110	
238 U	238.30 ppb	0.49	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	731187.06	2.70	811155.50	90.1	60 - 125	
45 Sc	1326108.60	2.09	1299874.00	102.0	60 - 125	
45 Sc	286620.84	1.35	282959.88	101.3	60 - 125	
45 Sc	2644172.80	1.27	2622763.00	100.8	60 - 125	
72 Ge	365423.44	0.91	373453.66	97.8	60 - 125	
72 Ge	157973.30	0.83	157911.92	100.0	60 - 125	
72 Ge	646777.88	0.64	650916.69	99.4	60 - 125	
115 In	4499969.00	0.42	4753398.50	94.7	60 - 125	
159 Tb	6832818.00	0.50	6916590.50	98.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04016.D\F6E04016.D#
Date Acquired: May 4 2016 04:14 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB1
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0073	ppb	50616.6	864.75	0.20	
9 Be	-0.0076	ppb	25.6	41.76	0.10	
11 B	-0.8427	ppb	7704.5	7.51	5.00	
23 Na	-0.7541	ppb	45990.6	23.31	40.00	
24 Mg	0.5120	ppb	6470.5	5.31	10.00	
27 Al	0.1639	ppb	3037.1	16.49	20.00	
28 Si	-0.9884	ppb	4100.7	4.14	20.00	
31 P	-1.8150	ppb	9268.0	18.52	10.00	
39 K	-1.5230	ppb	37657.8	56.23	20.00	
40 Ca	0.7279	ppb	15862.5	8.01	25.00	
47 Ti	0.0044	ppb	56.7	113.71	0.50	
51 V	-0.0113	ppb	1753.2	94.40	0.50	
52 Cr	-0.0174	ppb	526.0	33.63	0.20	
55 Mn	0.0130	ppb	1682.4	40.88	0.20	
56 Fe	2.2260	ppb	29006.6	8.39	10.00	
59 Co	-0.0028	ppb	187.8	31.13	0.20	
60 Ni	-0.0001	ppb	45.6	5703.20	0.20	
63 Cu	0.0129	ppb	310.9	34.78	0.40	
66 Zn	0.0166	ppb	380.0	50.28	2.00	
75 As	0.0083	ppb	73.1	84.90	0.20	
78 Se	0.0415	ppb	22.4	6.92	0.20	
88 Sr	-0.0095	ppb	465.6	19.73	0.20	
90 Zr	0.0018	ppb	284.5	39.05	2.00	
95 Mo	0.1141	ppb	863.4	6.12	0.40	
107 Ag	0.0001	ppb	25.6	584.22	0.20	
111 Cd	-0.0002	ppb	0.1	641.21	0.20	
118 Sn	0.0328	ppb	462.2	13.72	0.20	
121 Sb	0.1859	ppb	3758.4	7.33	0.40	
137 Ba	0.0032	ppb	75.6	75.13	0.20	
182 W	0.0137	ppb	347.8	13.48	1.00	
205 Tl	0.0052	ppb	292.2	19.35	0.20	
208 Pb	0.0027	ppb	516.7	35.17	0.10	
235 U	0.0000	ppb	12.2	537.05	1.00	
238 U	0.0116	ppb	721.2	17.41	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	754434.5	1.06	811155.50	93.0	60 - 125	
45 Sc	1318864.8	0.70	1299874.00	101.5	60 - 125	
45 Sc	287458.5	0.62	282959.88	101.6	60 - 125	
45 Sc	2644494.0	0.59	2622763.00	100.8	60 - 125	
72 Ge	377714.8	0.22	373453.66	101.1	60 - 125	
72 Ge	161162.1	0.26	157911.92	102.1	60 - 125	
72 Ge	656671.3	0.29	650916.69	100.9	60 - 125	
115 In	4860478.5	1.31	4753398.50	102.3	60 - 125	
159 Tb	7081500.0	1.17	6916590.50	102.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04035.D\F6E04035.D#
Date Acquired: May 4 2016 05:35 pm
Operator: CCapul
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 04 2016 03:42 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.41 ppb	1.99	25.00	90 - 110	
9 Be	27.97 ppb	2.67	25.00	90 - 110	Fail
11 B	52.39 ppb	0.94	50.00	90 - 110	
23 Na	22740.00 ppb	0.98	25000.00	90 - 110	
24 Mg	22260.00 ppb	2.41	25000.00	90 - 110	Fail
27 Al	22320.00 ppb	2.12	25000.00	90 - 110	Fail
28 Si	2294.00 ppb	0.76	2500.00	90 - 110	
31 P	231.80 ppb	0.58	250.00	90 - 110	
39 K	24130.00 ppb	0.91	25000.00	90 - 110	
40 Ca	23850.00 ppb	0.74	25000.00	90 - 110	
47 Ti	247.70 ppb	0.77	250.00	90 - 110	
51 V	263.50 ppb	1.67	250.00	90 - 110	
52 Cr	261.40 ppb	3.32	250.00	90 - 110	
55 Mn	1536.00 ppb	1.27	1500.00	90 - 110	
56 Fe	25490.00 ppb	0.63	25000.00	90 - 110	
59 Co	259.30 ppb	1.45	250.00	90 - 110	
60 Ni	261.80 ppb	1.42	250.00	90 - 110	
63 Cu	249.80 ppb	2.27	250.00	90 - 110	
66 Zn	247.20 ppb	0.86	250.00	90 - 110	
75 As	250.10 ppb	0.50	250.00	90 - 110	
78 Se	257.10 ppb	0.83	250.00	90 - 110	
88 Sr	260.60 ppb	1.06	250.00	90 - 110	
90 Zr	25.09 ppb	1.14	25.00	90 - 110	
95 Mo	248.10 ppb	0.55	250.00	90 - 110	
107 Ag	25.27 ppb	1.57	25.00	90 - 110	
111 Cd	256.40 ppb	0.89	250.00	90 - 110	
118 Sn	249.20 ppb	0.79	250.00	90 - 110	
121 Sb	249.50 ppb	1.10	250.00	90 - 110	
137 Ba	513.30 ppb	1.90	500.00	90 - 110	
182 W	24.30 ppb	0.50	25.00	90 - 110	
205 Tl	236.10 ppb	0.69	250.00	90 - 110	
208 Pb	222.10 ppb	0.89	250.00	90 - 110	Fail
235 U	1.63 ppb	0.31	1.80	90 - 110	
238 U	234.30 ppb	0.28	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	489705.78	0.66	811155.50	60.4	60 - 125	
45 Sc	1047516.90	0.95	1299874.00	80.6	60 - 125	
45 Sc	220265.44	1.35	282959.88	77.8	60 - 125	
45 Sc	2143658.30	1.04	2622763.00	81.7	60 - 125	
72 Ge	310683.00	1.04	373453.66	83.2	60 - 125	
72 Ge	131239.05	0.29	157911.92	83.1	60 - 125	
72 Ge	550980.38	0.04	650916.69	84.6	60 - 125	
115 In	4114767.50	1.17	4753398.50	86.6	60 - 125	
159 Tb	6477471.50	0.49	6916590.50	93.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04036.D\F6E04036.D#
Date Acquired: May 4 2016 05:39 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: CCB3
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1178	ppb	36843.3	76.83	0.20	
9 Be	-0.0105	ppb	11.1	27.96	0.10	
11 B	-2.1650	ppb	3191.6	7.03	5.00	
23 Na	-0.2271	ppb	39619.1	91.99	40.00	
24 Mg	0.2237	ppb	2937.1	14.95	10.00	
27 Al	0.1683	ppb	2631.4	13.17	20.00	
28 Si	-1.5550	ppb	2874.8	7.81	20.00	
31 P	-1.4670	ppb	8103.7	6.62	10.00	
39 K	-1.8850	ppb	30898.7	12.23	20.00	
40 Ca	1.4950	ppb	18173.0	2.72	25.00	
47 Ti	-0.0026	ppb	37.8	178.02	0.50	
51 V	0.0167	ppb	1567.2	32.56	0.50	
52 Cr	-0.0237	ppb	403.6	14.20	0.20	
55 Mn	0.0153	ppb	1487.9	19.00	0.20	
56 Fe	2.3210	ppb	25024.7	10.09	10.00	
59 Co	-0.0015	ppb	183.3	56.25	0.20	
60 Ni	0.0008	ppb	39.1	307.28	0.20	
63 Cu	0.0018	ppb	206.7	206.59	0.40	
66 Zn	0.0463	ppb	448.9	17.46	2.00	
75 As	0.0118	ppb	68.2	34.63	0.20	
78 Se	0.0468	ppb	22.0	14.93	0.20	
88 Sr	-0.0089	ppb	440.0	22.59	0.20	
90 Zr	0.0010	ppb	237.8	93.54	2.00	
95 Mo	0.0638	ppb	466.7	9.40	0.40	
107 Ag	0.0003	ppb	27.8	272.98	0.20	
111 Cd	0.0026	ppb	11.9	91.61	0.20	
118 Sn	0.0341	ppb	454.5	3.69	0.20	
121 Sb	0.2757	ppb	5004.4	4.06	0.40	
137 Ba	0.0060	ppb	88.9	63.20	0.20	
182 W	0.0120	ppb	307.8	26.50	1.00	
205 Tl	0.0049	ppb	273.3	18.98	0.20	
208 Pb	0.0028	ppb	510.0	25.60	0.10	
235 U	0.0000	ppb	11.1	405.41	1.00	
238 U	0.0117	ppb	710.0	21.54	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	538238.6	1.46	811155.50	66.4	60 - 125	
45 Sc	1095838.8	1.15	1299874.00	84.3	60 - 125	
45 Sc	237583.1	0.07	282959.88	84.0	60 - 125	
45 Sc	2245688.0	0.85	2622763.00	85.6	60 - 125	
72 Ge	333173.8	1.37	373453.66	89.2	60 - 125	
72 Ge	143689.7	0.61	157911.92	91.0	60 - 125	
72 Ge	592303.3	1.09	650916.69	91.0	60 - 125	
115 In	4616441.5	0.79	4753398.50	97.1	60 - 125	
159 Tb	6894938.0	1.40	6916590.50	99.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04017.D\F6E04017.D#
Date Acquired:	May 4 2016 04:18 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	IME006SB
Misc Info:	
Vial Number:	2101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	MBS
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1753	ppb	47919.1	39.37	0.50	
9 Be	-0.0037	ppb	35.6	85.68	0.50	
11 B	-0.6327	ppb	7554.4	11.93	10.00	
23 Na	4.3980	ppb	60933.9	5.13	100.00	
24 Mg	2.2230	ppb	23600.8	8.48	100.00	
27 Al	3.7960	ppb	53025.4	1.07	100.00	
28 Si	-0.1774	ppb	4882.4	149.61	50.00	
31 P	4.6810	ppb	13984.2	2.90	10.00	
39 K	3.3250	ppb	39894.9	12.27	100.00	
40 Ca	26.1700	ppb	209555.7	1.52	100.00	
47 Ti	0.0596	ppb	147.8	18.62	0.50	
51 V	0.0742	ppb	2113.9	13.09	0.50	
52 Cr	0.0536	ppb	914.9	7.81	0.50	
55 Mn	0.0852	ppb	3699.5	4.94	0.50	
56 Fe	4.4560	ppb	54095.3	1.48	100.00	
59 Co	-0.0017	ppb	206.7	89.24	0.50	
60 Ni	0.1731	ppb	392.0	2.25	0.50	
63 Cu	0.2689	ppb	1656.1	3.62	0.50	
66 Zn	2.1330	ppb	8654.0	0.44	2.00	Fail
75 As	0.0026	ppb	66.2	565.64	0.50	
78 Se	0.0111	ppb	7.8	50.95	0.50	
88 Sr	0.0284	ppb	1903.5	9.37	0.50	
90 Zr	0.0110	ppb	521.1	7.10	5.00	
95 Mo	0.0791	ppb	598.9	5.69	0.50	
107 Ag	0.0035	ppb	88.9	29.33	0.50	
111 Cd	-0.0003	ppb	-0.1	595.31	0.50	
118 Sn	3.5090	ppb	43219.2	0.92	20.00	
121 Sb	0.1068	ppb	2407.0	5.12	0.50	
137 Ba	0.0679	ppb	490.0	3.54	0.50	
182 W	0.0096	ppb	277.8	19.68	2.00	
205 Tl	0.0025	ppb	194.5	20.67	0.50	
208 Pb	0.0329	ppb	2201.3	5.91	0.50	
235 U	0.0000	ppb	16.7	113.66	---	
238 U	0.0048	ppb	315.6	9.39	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	693624.2	1.03	811155.50	85.5	60 - 125	
45 Sc	1284045.5	1.61	1299874.00	98.8	60 - 125	
45 Sc	277390.5	0.59	282959.88	98.0	60 - 125	
45 Sc	2564350.5	0.41	2622763.00	97.8	60 - 125	
72 Ge	371397.1	0.58	373453.66	99.4	60 - 125	
72 Ge	157641.9	0.87	157911.92	99.8	60 - 125	
72 Ge	647615.0	0.03	650916.69	99.5	60 - 125	
115 In	4818598.5	1.10	4753398.50	101.4	60 - 125	
159 Tb	7203254.0	0.45	6916590.50	104.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04018.D\F6E04018.D#
Date Acquired: May 4 2016 04:22 pm
Operator: CCapul
Sample Name: IME006SL
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: LCSS
Final Dil Factor: 1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	331940.19	40.38	ppb	1.79	40.00	80 - 120	
9 Be	122960.50	41.89	ppb	2.07	40.00	80 - 120	
11 B	93467.94	40.12	ppb	0.19	40.00	80 - 120	
23 Na	12364770.00	4105.00	ppb	2.01	4000.00	80 - 120	
24 Mg	38873552.00	3947.00	ppb	1.05	4000.00	80 - 120	
27 Al	52286288.00	3900.00	ppb	0.92	4000.00	80 - 120	
28 Si	5814.72	0.91	ppb	13.12	4000.00	80 - 120	Fail
31 P	13256.80	4.22	ppb	6.95	400.00	80 - 120	Fail
39 K	2904647.00	4057.00	ppb	1.16	4000.00	80 - 120	
40 Ca	29384060.00	4026.00	ppb	1.74	4000.00	80 - 120	
47 Ti	65900.77	40.21	ppb	0.34	40.00	80 - 120	
51 V	201462.91	41.89	ppb	0.53	40.00	80 - 120	
52 Cr	234330.20	42.25	ppb	0.14	40.00	80 - 120	
55 Mn	1195948.00	42.92	ppb	0.49	40.00	80 - 120	
56 Fe	45671900.00	4117.00	ppb	0.81	4000.00	80 - 120	
59 Co	891588.88	42.59	ppb	0.72	40.00	80 - 120	
60 Ni	81772.21	42.15	ppb	0.63	40.00	80 - 120	
63 Cu	208012.00	40.67	ppb	0.49	40.00	80 - 120	
66 Zn	313332.59	83.08	ppb	0.78	80.00	80 - 120	
75 As	36090.03	39.41	ppb	0.66	40.00	80 - 120	
78 Se	18388.48	40.92	ppb	0.58	40.00	80 - 120	
88 Sr	1574418.00	42.87	ppb	0.82	40.00	80 - 120	
90 Zr	1845.75	0.06	ppb	10.75	30.00	80 - 120	Fail
95 Mo	279829.50	39.26	ppb	0.44	40.00	80 - 120	
107 Ag	746711.69	41.16	ppb	0.56	40.00	80 - 120	
111 Cd	174480.80	40.35	ppb	0.65	40.00	80 - 120	
118 Sn	527685.19	44.08	ppb	0.58	40.00	80 - 120	
121 Sb	662863.69	40.84	ppb	0.88	40.00	80 - 120	
137 Ba	255625.91	40.98	ppb	0.94	40.00	80 - 120	
182 W	376.69	0.02	ppb	22.76	40.00	80 - 120	Fail
205 Tl	1477491.00	40.56	ppb	0.58	40.00	80 - 120	
208 Pb	2064445.00	38.24	ppb	0.64	40.00	80 - 120	
235 U	17588.12	0.27	ppb	2.48	0.28	80 - 120	
238 U	2376694.00	39.43	ppb	0.74	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	654933.56	0.97	811155.50	80.7	60 - 125	
45 Sc	1228036.40	0.85	1299874.00	94.5	60 - 125	
45 Sc	267512.31	0.08	282959.88	94.5	60 - 125	
45 Sc	2493741.00	0.13	2622763.00	95.1	60 - 125	
72 Ge	354767.00	1.01	373453.66	95.0	60 - 125	
72 Ge	153135.56	0.41	157911.92	97.0	60 - 125	
72 Ge	623708.25	0.76	650916.69	95.8	60 - 125	
115 In	4688804.00	0.51	4753398.50	98.6	60 - 125	
159 Tb	7003833.00	0.26	6916590.50	101.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04019.D\F6E04019.D#
Date Acquired: May 4 2016 04:27 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E014-01M
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	439994.4	0.0000	57.6700	ppb	0.79	50.00	>LRS
9 Be	# 3	6	126394.2	0.0000	44.5600	ppb	0.36	50.00	
11 B	# 3	6	100126.9	0.0000	44.9100	ppb	0.83	100.00	
23 Na	# 1	45	12381110.0	0.0000	3896.0000	ppb	0.76	50000.00	
24 Mg	# 3	45	68785512.0	0.0000	6564.0000	ppb	2.18	50000.00	
27 Al	# 3	45	353116000.0	0.0000	24750.0000	ppb	0.89	50000.00	
28 Si	# 1	45	5201612.0	0.0000	4691.0000	ppb	1.04	5000.00	
31 P	# 3	45	249613.4	0.0000	300.0000	ppb	1.02	500.00	
39 K	# 2	45	5779674.0	0.0000	7777.0000	ppb	1.60	50000.00	
40 Ca	# 1	45	56354280.0	0.0000	7320.0000	ppb	0.66	50000.00	
47 Ti	# 3	45	607110.4	0.0000	348.3000	ppb	0.78	500.00	
51 V	# 2	45	376977.3	0.0000	75.3400	ppb	0.68	500.00	
52 Cr	# 2	45	353003.7	0.0000	60.9900	ppb	0.17	500.00	
55 Mn	# 3	45	15351960.0	0.0000	518.2000	ppb	0.83	3000.00	
56 Fe	# 1	45	268759710.0	0.0000	22970.0000	ppb	0.79	50000.00	
59 Co	# 3	45	1081475.0	0.0000	48.5500	ppb	0.79	500.00	
60 Ni	# 2	45	115615.1	0.0000	57.0700	ppb	0.20	500.00	
63 Cu	# 2	45	282974.6	0.0000	52.9900	ppb	0.43	500.00	
66 Zn	# 3	72	498061.7	0.0000	130.8000	ppb	0.63	500.00	
75 As	# 2	72	40478.4	0.0000	43.9400	ppb	0.74	500.00	
78 Se	# 1	72	18236.3	0.0000	40.2000	ppb	0.17	500.00	
88 Sr	# 3	72	2572068.0	0.0000	69.3600	ppb	0.71	500.00	
90 Zr	# 3	72	145831.6	0.0000	5.7410	ppb	1.30	50.00	
95 Mo	# 3	115	263976.1	0.0000	37.6700	ppb	1.48	500.00	
107 Ag	# 3	115	740985.2	0.0000	41.5400	ppb	2.15	50.00	
111 Cd	# 3	115	174317.3	0.0000	41.0000	ppb	0.51	500.00	
118 Sn	# 3	115	532016.0	0.0000	45.2100	ppb	0.95	500.00	
121 Sb	# 3	115	409230.6	0.0000	25.6300	ppb	0.88	500.00	
137 Ba	# 3	115	1186130.0	0.0000	193.4000	ppb	1.64	1000.00	
182 W	# 3	159	2571.5	0.0000	0.1365	ppb	1.61	50.00	
205 Tl	# 3	159	1450398.0	0.0000	39.6100	ppb	0.90	500.00	
208 Pb	# 3	159	2758843.0	0.0000	50.8300	ppb	1.51	500.00	
235 U	# 3	159	17218.7	0.0000	0.2655	ppb	0.87	30.00	
238 U	# 3	159	2345339.0	0.0000	38.7000	ppb	1.13	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	632947.88	0.42	811155.50	78.0	60 - 125	
45 Sc # 1	1295373.80	0.53	1299874.00	99.7	60 - 125	
45 Sc # 2	279359.06	0.67	282959.88	98.7	60 - 125	
45 Sc # 3	2653715.30	0.76	2622763.00	101.2	60 - 125	
72 Ge # 1	358091.91	0.40	373453.66	95.9	60 - 125	
72 Ge # 2	154084.75	1.02	157911.92	97.6	60 - 125	
72 Ge # 3	629905.88	0.47	650916.69	96.8	60 - 125	
115 In # 3	4609976.00	0.76	4753398.50	97.0	60 - 125	
159 Tb # 3	7042167.50	1.13	6916590.50	101.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04020.D\F6E04020.D#
Date Acquired:	May 4 2016 04:31 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-01A
Misc Info:	
Vial Number:	2104
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	420560.9	0.0000	55.3100	ppb	1.44	50.00	>LRS
9 Be	# 3	6	127643.0	0.0000	45.3300	ppb	1.60	50.00	
11 B	# 3	6	100853.9	0.0000	45.6300	ppb	0.87	100.00	
23 Na	# 1	45	12351700.0	0.0000	3948.0000	ppb	1.01	50000.00	
24 Mg	# 3	45	63789448.0	0.0000	6106.0000	ppb	0.63	50000.00	
27 Al	# 3	45	271608800.0	0.0000	19100.0000	ppb	0.50	50000.00	
28 Si	# 1	45	4053338.0	0.0000	3712.0000	ppb	2.64	5000.00	
31 P	# 3	45	226275.5	0.0000	271.6000	ppb	0.57	500.00	
39 K	# 2	45	5389685.0	0.0000	7274.0000	ppb	2.31	50000.00	
40 Ca	# 1	45	55209820.0	0.0000	7284.0000	ppb	0.28	50000.00	
47 Ti	# 3	45	564344.0	0.0000	324.8000	ppb	1.30	500.00	
51 V	# 2	45	373167.3	0.0000	74.8200	ppb	1.21	500.00	
52 Cr	# 2	45	339603.4	0.0000	58.8700	ppb	1.12	500.00	
55 Mn	# 3	45	14438580.0	0.0000	488.9000	ppb	1.36	3000.00	
56 Fe	# 1	45	246580700.0	0.0000	21410.0000	ppb	0.86	50000.00	
59 Co	# 3	45	1090916.0	0.0000	49.1200	ppb	0.83	500.00	
60 Ni	# 2	45	113477.0	0.0000	56.2000	ppb	1.22	500.00	
63 Cu	# 2	45	285347.9	0.0000	53.6100	ppb	1.01	500.00	
66 Zn	# 3	72	472015.0	0.0000	124.3000	ppb	0.87	500.00	
75 As	# 2	72	41591.8	0.0000	45.2100	ppb	1.37	500.00	
78 Se	# 1	72	19129.0	0.0000	42.2800	ppb	0.57	500.00	
88 Sr	# 3	72	2462681.0	0.0000	66.5800	ppb	0.74	500.00	
90 Zr	# 3	72	96417.0	0.0000	3.8020	ppb	1.29	50.00	
95 Mo	# 3	115	287861.9	0.0000	41.1000	ppb	1.61	500.00	
107 Ag	# 3	115	734237.7	0.0000	41.1900	ppb	0.85	50.00	
111 Cd	# 3	115	175255.1	0.0000	41.2500	ppb	0.50	500.00	
118 Sn	# 3	115	540593.4	0.0000	45.9600	ppb	0.10	500.00	
121 Sb	# 3	115	661407.3	0.0000	41.4800	ppb	1.18	500.00	
137 Ba	# 3	115	1130471.0	0.0000	184.4000	ppb	0.75	1000.00	
182 W	# 3	159	2309.2	0.0000	0.1225	ppb	2.30	50.00	
205 Tl	# 3	159	1465263.0	0.0000	40.1700	ppb	1.27	500.00	
208 Pb	# 3	159	2741801.0	0.0000	50.7100	ppb	1.61	500.00	
235 U	# 3	159	17185.3	0.0000	0.2660	ppb	1.20	30.00	
238 U	# 3	159	2383378.0	0.0000	39.4700	ppb	0.76	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	628250.88	0.74	811155.50	77.5	60 - 125	
45 Sc # 1	1275254.60	1.31	1299874.00	98.1	60 - 125	
45 Sc # 2	278469.91	1.46	282959.88	98.4	60 - 125	
45 Sc # 3	2645469.80	0.75	2622763.00	100.9	60 - 125	
72 Ge # 1	357133.03	1.79	373453.66	95.6	60 - 125	
72 Ge # 2	153894.59	1.42	157911.92	97.5	60 - 125	
72 Ge # 3	628341.44	1.18	650916.69	96.5	60 - 125	
115 In # 3	4607415.00	0.72	4753398.50	96.9	60 - 125	
159 Tb # 3	7015339.00	0.67	6916590.50	101.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04021.D\F6E04021.D#
Date Acquired:	May 4 2016 04:35 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-01
Misc Info:	
Vial Number:	2105
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	128414.0	0.0000	12.5900	ppb	2.43	50.00	
9 Be	# 3	6	3121.5	0.0000	1.0930	ppb	2.47	50.00	
11 B	# 3	6	16054.7	0.0000	3.8960	ppb	3.23	100.00	
23 Na	# 1	45	154790.2	0.0000	35.8700	ppb	0.95	50000.00	
24 Mg	# 3	45	25957310.0	0.0000	2515.0000	ppb	1.73	50000.00	
27 Al	# 3	45	220405410.0	0.0000	15680.0000	ppb	0.97	50000.00	
28 Si	# 1	45	3804710.0	0.0000	3569.0000	ppb	1.64	5000.00	
31 P	# 3	45	226026.7	0.0000	274.7000	ppb	0.65	500.00	
39 K	# 2	45	2559346.0	0.0000	3424.0000	ppb	1.48	50000.00	
40 Ca	# 1	45	25015920.0	0.0000	3381.0000	ppb	0.92	50000.00	
47 Ti	# 3	45	497469.1	0.0000	289.8000	ppb	0.86	500.00	
51 V	# 2	45	168106.6	0.0000	33.4900	ppb	0.65	500.00	
52 Cr	# 2	45	105875.0	0.0000	18.2700	ppb	0.31	500.00	
55 Mn	# 3	45	13397420.0	0.0000	459.1000	ppb	1.27	3000.00	
56 Fe	# 1	45	197398700.0	0.0000	17560.0000	ppb	0.48	50000.00	
59 Co	# 3	45	185703.0	0.0000	8.4540	ppb	1.66	500.00	
60 Ni	# 2	45	31697.4	0.0000	15.6700	ppb	0.52	500.00	
63 Cu	# 2	45	76503.2	0.0000	14.3300	ppb	0.38	500.00	
66 Zn	# 3	72	170975.9	0.0000	44.5400	ppb	1.34	500.00	
75 As	# 2	72	4984.2	0.0000	5.2500	ppb	1.45	500.00	
78 Se	# 1	72	153.1	0.0000	0.3420	ppb	10.01	500.00	
88 Sr	# 3	72	895722.5	0.0000	23.9700	ppb	1.22	500.00	
90 Zr	# 3	72	96059.6	0.0000	3.7520	ppb	2.17	50.00	
95 Mo	# 3	115	3774.0	0.0000	0.5208	ppb	7.18	500.00	
107 Ag	# 3	115	1290.1	0.0000	0.0690	ppb	5.22	50.00	
111 Cd	# 3	115	2166.8	0.0000	0.4950	ppb	4.34	500.00	
118 Sn	# 3	115	47011.6	0.0000	3.8770	ppb	1.60	500.00	
121 Sb	# 3	115	6715.2	0.0000	0.3717	ppb	3.07	500.00	
137 Ba	# 3	115	904005.7	0.0000	143.2000	ppb	1.46	1000.00	
182 W	# 3	159	2124.7	0.0000	0.1111	ppb	2.95	50.00	
205 Tl	# 3	159	9670.6	0.0000	0.2596	ppb	2.35	500.00	
208 Pb	# 3	159	768269.0	0.0000	14.0600	ppb	3.52	500.00	
235 U	# 3	159	222.2	0.0000	0.0032	ppb	16.51	30.00	
238 U	# 3	159	33606.9	0.0000	0.5505	ppb	0.93	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	628710.44	1.62	811155.50	77.5	60 - 125	
45 Sc # 1	1244779.30	1.59	1299874.00	95.8	60 - 125	
45 Sc # 2	278653.97	0.44	282959.88	98.5	60 - 125	
45 Sc # 3	2613909.30	0.05	2622763.00	99.7	60 - 125	
72 Ge # 1	347435.84	2.52	373453.66	93.0	60 - 125	
72 Ge # 2	157005.27	0.34	157911.92	99.4	60 - 125	
72 Ge # 3	634365.63	0.60	650916.69	97.5	60 - 125	
115 In # 3	4744748.00	1.16	4753398.50	99.8	60 - 125	
159 Tb # 3	7089998.00	1.37	6916590.50	102.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04022.D\F6E04022.D#
Date Acquired: May 4 2016 04:39 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E014-01J
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	63153.7	0.0000	2.7080	ppb	2.26	50.00	
9 Be	# 3	6	592.3	0.0000	0.1872	ppb	0.80	50.00	
11 B	# 3	6	7607.8	0.0000	-0.3980	ppb	61.08	100.00	
23 Na	# 1	45	74536.8	0.0000	10.3200	ppb	7.56	50000.00	
24 Mg	# 3	45	5345713.0	0.0000	523.5000	ppb	0.46	50000.00	
27 Al	# 3	45	45236320.0	0.0000	3254.0000	ppb	1.39	50000.00	
28 Si	# 1	45	789724.7	0.0000	763.2000	ppb	6.01	5000.00	
31 P	# 3	45	53498.0	0.0000	55.4700	ppb	1.53	500.00	
39 K	# 2	45	571240.3	0.0000	732.9000	ppb	0.76	50000.00	
40 Ca	# 1	45	5180907.0	0.0000	723.0000	ppb	1.94	50000.00	
47 Ti	# 3	45	101707.3	0.0000	59.8700	ppb	0.92	500.00	
51 V	# 2	45	35318.9	0.0000	6.8320	ppb	0.45	500.00	
52 Cr	# 2	45	21965.2	0.0000	3.7460	ppb	0.58	500.00	
55 Mn	# 3	45	2802733.0	0.0000	97.0700	ppb	0.79	3000.00	
56 Fe	# 1	45	40591580.0	0.0000	3731.0000	ppb	0.45	50000.00	
59 Co	# 3	45	38516.7	0.0000	1.7640	ppb	1.76	500.00	
60 Ni	# 2	45	6619.8	0.0000	3.2910	ppb	0.87	500.00	
63 Cu	# 2	45	17079.4	0.0000	3.2000	ppb	0.87	500.00	
66 Zn	# 3	72	38663.6	0.0000	9.8200	ppb	1.08	500.00	
75 As	# 2	72	1064.7	0.0000	1.0600	ppb	4.93	500.00	
78 Se	# 1	72	31.1	0.0000	0.0639	ppb	16.22	500.00	
88 Sr	# 3	72	189025.0	0.0000	4.9460	ppb	0.57	500.00	
90 Zr	# 3	72	19512.9	0.0000	0.7407	ppb	3.08	50.00	
95 Mo	# 3	115	871.2	0.0000	0.1149	ppb	8.27	500.00	
107 Ag	# 3	115	321.1	0.0000	0.0158	ppb	11.17	50.00	
111 Cd	# 3	115	420.1	0.0000	0.0932	ppb	18.92	500.00	
118 Sn	# 3	115	9842.8	0.0000	0.7868	ppb	1.74	500.00	
121 Sb	# 3	115	2532.6	0.0000	0.1127	ppb	10.92	500.00	
137 Ba	# 3	115	188460.6	0.0000	29.0600	ppb	1.59	1000.00	
182 W	# 3	159	548.9	0.0000	0.0243	ppb	6.07	50.00	
205 Tl	# 3	159	2054.7	0.0000	0.0522	ppb	4.03	500.00	
208 Pb	# 3	159	162394.9	0.0000	2.9220	ppb	1.93	500.00	
235 U	# 3	159	55.6	0.0000	0.0006	ppb	3.97	30.00	
238 U	# 3	159	6775.4	0.0000	0.1091	ppb	3.66	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	653348.00	1.52	811155.50	80.5	60 - 125	
45 Sc # 1	1204411.50	3.73	1299874.00	92.7	60 - 125	
45 Sc # 2	275704.56	0.44	282959.88	97.4	60 - 125	
45 Sc # 3	2585378.30	0.37	2622763.00	98.6	60 - 125	
72 Ge # 1	354693.63	2.22	373453.66	95.0	60 - 125	
72 Ge # 2	158234.70	1.27	157911.92	100.2	60 - 125	
72 Ge # 3	646518.06	0.27	650916.69	99.3	60 - 125	
115 In # 3	4873646.50	1.09	4753398.50	102.5	60 - 125	
159 Tb # 3	7195345.00	0.72	6916590.50	104.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04023.D\F6E04023.D#
Date Acquired:	May 4 2016 04:44 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-01D
Misc Info:	
Vial Number:	2107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	131492.9	0.0000	13.5900	ppb	2.17	50.00	
9 Be	# 3	6	3126.0	0.0000	1.1260	ppb	1.04	50.00	
11 B	# 3	6	15672.1	0.0000	3.9260	ppb	2.43	100.00	
23 Na	# 1	45	164948.1	0.0000	40.2900	ppb	5.35	50000.00	
24 Mg	# 3	45	26244520.0	0.0000	2574.0000	ppb	1.41	50000.00	
27 Al	# 3	45	224018700.0	0.0000	16140.0000	ppb	0.19	50000.00	
28 Si	# 1	45	3336564.0	0.0000	3190.0000	ppb	1.79	5000.00	
31 P	# 3	45	226017.4	0.0000	278.3000	ppb	0.08	500.00	
39 K	# 2	45	2657263.0	0.0000	3587.0000	ppb	1.10	50000.00	
40 Ca	# 1	45	25560620.0	0.0000	3521.0000	ppb	1.46	50000.00	
47 Ti	# 3	45	511915.0	0.0000	301.9000	ppb	0.60	500.00	
51 V	# 2	45	176483.9	0.0000	35.4700	ppb	1.18	500.00	
52 Cr	# 2	45	110289.6	0.0000	19.1900	ppb	0.71	500.00	
55 Mn	# 3	45	13890160.0	0.0000	482.0000	ppb	1.32	3000.00	
56 Fe	# 1	45	204121300.0	0.0000	18510.0000	ppb	0.19	50000.00	
59 Co	# 3	45	191026.0	0.0000	8.8060	ppb	1.40	500.00	
60 Ni	# 2	45	32839.7	0.0000	16.3700	ppb	0.80	500.00	
63 Cu	# 2	45	78898.6	0.0000	14.9000	ppb	1.29	500.00	
66 Zn	# 3	72	180188.0	0.0000	47.1900	ppb	1.37	500.00	
75 As	# 2	72	5223.4	0.0000	5.5050	ppb	1.77	500.00	
78 Se	# 1	72	153.3	0.0000	0.3459	ppb	4.16	500.00	
88 Sr	# 3	72	925867.3	0.0000	24.9000	ppb	0.60	500.00	
90 Zr	# 3	72	101495.0	0.0000	3.9860	ppb	1.70	50.00	
95 Mo	# 3	115	4060.7	0.0000	0.5580	ppb	3.95	500.00	
107 Ag	# 3	115	1322.3	0.0000	0.0705	ppb	3.67	50.00	
111 Cd	# 3	115	2187.8	0.0000	0.4977	ppb	2.67	500.00	
118 Sn	# 3	115	49305.0	0.0000	4.0500	ppb	1.43	500.00	
121 Sb	# 3	115	6906.4	0.0000	0.3816	ppb	2.89	500.00	
137 Ba	# 3	115	938095.3	0.0000	148.0000	ppb	0.90	1000.00	
182 W	# 3	159	2170.3	0.0000	0.1133	ppb	2.96	50.00	
205 Tl	# 3	159	9858.5	0.0000	0.2640	ppb	1.80	500.00	
208 Pb	# 3	159	801703.1	0.0000	14.6300	ppb	0.65	500.00	
235 U	# 3	159	267.8	0.0000	0.0039	ppb	9.38	30.00	
238 U	# 3	159	34554.9	0.0000	0.5646	ppb	0.92	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	611291.81	1.29	811155.50	75.4	60 - 125	
45 Sc # 1	1220876.40	1.97	1299874.00	93.9	60 - 125	
45 Sc # 2	276362.09	1.39	282959.88	97.7	60 - 125	
45 Sc # 3	2581726.30	1.31	2622763.00	98.4	60 - 125	
72 Ge # 1	344351.47	2.75	373453.66	92.2	60 - 125	
72 Ge # 2	157021.47	1.24	157911.92	99.4	60 - 125	
72 Ge # 3	631103.69	1.37	650916.69	97.0	60 - 125	
115 In # 3	4763938.50	0.43	4753398.50	100.2	60 - 125	
159 Tb # 3	7107230.00	0.20	6916590.50	102.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04024.D\F6E04024.D#
Date Acquired:	May 4 2016 04:48 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-02
Misc Info:	
Vial Number:	2108
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	137142.6	0.0000	14.7500	ppb	1.36	50.00	
9 Be	# 3	6	4301.9	0.0000	1.5800	ppb	5.12	50.00	
11 B	# 3	6	18143.8	0.0000	5.3170	ppb	4.75	100.00	
23 Na	# 1	45	478481.7	0.0000	140.9000	ppb	1.84	50000.00	
24 Mg	# 3	45	41916912.0	0.0000	4080.0000	ppb	0.76	50000.00	
27 Al	# 3	45	309770210.0	0.0000	22140.0000	ppb	0.63	50000.00	
28 Si	# 1	45	2934934.0	0.0000	2728.0000	ppb	1.36	5000.00	
31 P	# 3	45	489963.9	0.0000	614.1000	ppb	1.06	500.00	>LRS
39 K	# 2	45	3701217.0	0.0000	4984.0000	ppb	0.98	50000.00	
40 Ca	# 1	45	70342944.0	0.0000	9423.0000	ppb	0.62	50000.00	
47 Ti	# 3	45	623090.3	0.0000	364.6000	ppb	1.49	500.00	
51 V	# 2	45	209906.9	0.0000	41.9800	ppb	1.23	500.00	
52 Cr	# 2	45	155603.8	0.0000	26.9500	ppb	1.08	500.00	
55 Mn	# 3	45	13828540.0	0.0000	476.1000	ppb	2.25	3000.00	
56 Fe	# 1	45	296240800.0	0.0000	26110.0000	ppb	1.32	50000.00	
59 Co	# 3	45	218628.7	0.0000	10.0000	ppb	0.44	500.00	
60 Ni	# 2	45	36280.7	0.0000	17.9700	ppb	1.04	500.00	
63 Cu	# 2	45	97953.9	0.0000	18.3900	ppb	0.66	500.00	
66 Zn	# 3	72	251959.5	0.0000	65.6700	ppb	0.47	500.00	
75 As	# 2	72	5355.5	0.0000	5.7390	ppb	1.61	500.00	
78 Se	# 1	72	99.6	0.0000	0.2179	ppb	9.65	500.00	
88 Sr	# 3	72	1629084.0	0.0000	43.6200	ppb	0.69	500.00	
90 Zr	# 3	72	250926.4	0.0000	9.8160	ppb	0.68	50.00	
95 Mo	# 3	115	5618.0	0.0000	0.8027	ppb	1.33	500.00	
107 Ag	# 3	115	1527.9	0.0000	0.0847	ppb	6.48	50.00	
111 Cd	# 3	115	2155.9	0.0000	0.5091	ppb	5.02	500.00	
118 Sn	# 3	115	49264.7	0.0000	4.2020	ppb	0.69	500.00	
121 Sb	# 3	115	6101.6	0.0000	0.3469	ppb	1.02	500.00	
137 Ba	# 3	115	1114127.0	0.0000	182.5000	ppb	0.87	1000.00	
182 W	# 3	159	1791.3	0.0000	0.0926	ppb	4.96	50.00	
205 Tl	# 3	159	12021.5	0.0000	0.3228	ppb	2.71	500.00	
208 Pb	# 3	159	945420.8	0.0000	17.2600	ppb	1.51	500.00	
235 U	# 3	159	685.6	0.0000	0.0103	ppb	11.55	30.00	
238 U	# 3	159	88780.0	0.0000	1.4520	ppb	2.19	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	602072.50	0.38	811155.50	74.2	60 - 125	
45 Sc # 1	1256034.00	1.77	1299874.00	96.6	60 - 125	
45 Sc # 2	278143.66	0.86	282959.88	98.3	60 - 125	
45 Sc # 3	2601855.30	0.39	2622763.00	99.2	60 - 125	
72 Ge # 1	352077.47	0.74	373453.66	94.3	60 - 125	
72 Ge # 2	154498.38	0.42	157911.92	97.8	60 - 125	
72 Ge # 3	634324.56	0.98	650916.69	97.5	60 - 125	
115 In # 3	4588343.50	1.15	4753398.50	96.5	60 - 125	
159 Tb # 3	7102585.50	1.19	6916590.50	102.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04025.D\F6E04025.D#
Date Acquired: May 4 2016 04:52 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E014-03
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	90339.1	0.0000	10.9800	ppb	2.17	50.00	
9 Be	# 3	6	1051.2	0.0000	0.4698	ppb	3.19	50.00	
11 B	# 3	6	12569.0	0.0000	4.0320	ppb	2.08	100.00	
23 Na	# 1	45	601903.8	0.0000	235.0000	ppb	0.19	50000.00	
24 Mg	# 3	45	43273088.0	0.0000	5535.0000	ppb	1.65	50000.00	
27 Al	# 3	45	64744240.0	0.0000	6083.0000	ppb	1.12	50000.00	
28 Si	# 1	45	2181633.0	0.0000	2585.0000	ppb	2.29	5000.00	
31 P	# 3	45	538584.3	0.0000	893.3000	ppb	0.76	500.00	>LRS
39 K	# 2	45	845780.2	0.0000	1408.0000	ppb	0.17	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	124818.4	0.0000	95.9800	ppb	1.23	500.00	
51 V	# 2	45	56140.4	0.0000	14.0100	ppb	0.19	500.00	
52 Cr	# 2	45	29188.4	0.0000	6.3300	ppb	0.45	500.00	
55 Mn	# 3	45	1513303.0	0.0000	68.4400	ppb	2.03	3000.00	
56 Fe	# 1	45	43918192.0	0.0000	4936.0000	ppb	2.06	50000.00	
59 Co	# 3	45	97077.3	0.0000	5.8320	ppb	2.56	500.00	
60 Ni	# 2	45	12743.2	0.0000	7.9950	ppb	0.22	500.00	
63 Cu	# 2	45	21759.0	0.0000	5.1510	ppb	0.40	500.00	
66 Zn	# 3	72	46794.2	0.0000	15.9600	ppb	1.26	500.00	
75 As	# 2	72	3589.8	0.0000	4.8780	ppb	2.14	500.00	
78 Se	# 1	72	62.0	0.0000	0.1679	ppb	9.73	500.00	
88 Sr	# 3	72	19244500.0	0.0000	677.0000	ppb	0.57	500.00	>LRS
90 Zr	# 3	72	95738.2	0.0000	4.9150	ppb	1.78	50.00	
95 Mo	# 3	115	1774.6	0.0000	0.3037	ppb	4.78	500.00	
107 Ag	# 3	115	643.4	0.0000	0.0423	ppb	4.89	50.00	
111 Cd	# 3	115	1712.9	0.0000	0.4873	ppb	2.19	500.00	
118 Sn	# 3	115	34028.9	0.0000	3.4940	ppb	1.15	500.00	
121 Sb	# 3	115	3884.0	0.0000	0.2571	ppb	3.29	500.00	
137 Ba	# 3	115	2014017.0	0.0000	397.4000	ppb	1.57	1000.00	
182 W	# 3	159	6756.4	0.0000	0.4457	ppb	2.47	50.00	
205 Tl	# 3	159	4507.6	0.0000	0.1462	ppb	6.25	500.00	
208 Pb	# 3	159	183805.3	0.0000	4.0900	ppb	1.21	500.00	
235 U	# 3	159	455.6	0.0000	0.0083	ppb	18.87	30.00	
238 U	# 3	159	59037.6	0.0000	1.1780	ppb	2.10	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	483804.25	0.60	811155.50	59.6	60 - 125	ISFail
45 Sc # 1	985017.88	0.93	1299874.00	75.8	60 - 125	
45 Sc # 2	219291.72	0.60	282959.88	77.5	60 - 125	
45 Sc # 3	1979664.40	0.72	2622763.00	75.5	60 - 125	
72 Ge # 1	282208.78	0.85	373453.66	75.6	60 - 125	
72 Ge # 2	121588.97	0.99	157911.92	77.0	60 - 125	
72 Ge # 3	482962.91	0.54	650916.69	74.2	60 - 125	
115 In # 3	3810289.00	0.60	4753398.50	80.2	60 - 125	
159 Tb # 3	5821278.50	1.07	6916590.50	84.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

3 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04026.D\F6E04026.D#
Date Acquired:	May 4 2016 04:56 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-04
Misc Info:	
Vial Number:	2110
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	153639.7	0.0000	20.2800	ppb	0.74	50.00	
9 Be	# 3	6	4010.7	0.0000	1.6630	ppb	4.45	50.00	
11 B	# 3	6	13862.5	0.0000	4.0350	ppb	2.97	100.00	
23 Na	# 1	45	257376.0	0.0000	76.5700	ppb	2.23	50000.00	
24 Mg	# 3	45	38073848.0	0.0000	4094.0000	ppb	0.93	50000.00	
27 Al	# 3	45	302694590.0	0.0000	23900.0000	ppb	1.57	50000.00	
28 Si	# 1	45	3029048.0	0.0000	3075.0000	ppb	1.23	5000.00	
31 P	# 3	45	193914.8	0.0000	260.9000	ppb	0.65	500.00	
39 K	# 2	45	2946072.0	0.0000	4468.0000	ppb	1.09	50000.00	
40 Ca	# 1	45	31707680.0	0.0000	4639.0000	ppb	1.65	50000.00	
47 Ti	# 3	45	543967.5	0.0000	351.7000	ppb	0.31	500.00	
51 V	# 2	45	242777.4	0.0000	54.8500	ppb	0.70	500.00	
52 Cr	# 2	45	135214.6	0.0000	26.4000	ppb	1.04	500.00	
55 Mn	# 3	45	13982720.0	0.0000	531.8000	ppb	0.82	3000.00	
56 Fe	# 1	45	275839620.0	0.0000	26550.0000	ppb	0.70	50000.00	
59 Co	# 3	45	235257.8	0.0000	11.8900	ppb	0.99	500.00	
60 Ni	# 2	45	41803.2	0.0000	23.3600	ppb	0.76	500.00	
63 Cu	# 2	45	82674.6	0.0000	17.5000	ppb	0.77	500.00	
66 Zn	# 3	72	228828.9	0.0000	63.8600	ppb	0.72	500.00	
75 As	# 2	72	7062.4	0.0000	8.3590	ppb	0.99	500.00	
78 Se	# 1	72	180.2	0.0000	0.4368	ppb	4.44	500.00	
88 Sr	# 3	72	1763043.0	0.0000	50.5500	ppb	1.25	500.00	
90 Zr	# 3	72	120532.4	0.0000	5.0450	ppb	2.04	50.00	
95 Mo	# 3	115	5411.2	0.0000	0.7811	ppb	1.25	500.00	
107 Ag	# 3	115	1849.1	0.0000	0.1039	ppb	4.83	50.00	
111 Cd	# 3	115	1988.9	0.0000	0.4746	ppb	3.36	500.00	
118 Sn	# 3	115	50457.0	0.0000	4.3480	ppb	0.46	500.00	
121 Sb	# 3	115	6167.1	0.0000	0.3550	ppb	2.93	500.00	
137 Ba	# 3	115	1181716.0	0.0000	195.6000	ppb	0.47	1000.00	
182 W	# 3	159	2236.9	0.0000	0.1195	ppb	1.93	50.00	
205 Tl	# 3	159	14191.5	0.0000	0.3893	ppb	1.89	500.00	
208 Pb	# 3	159	1020883.0	0.0000	19.0200	ppb	1.13	500.00	
235 U	# 3	159	347.8	0.0000	0.0052	ppb	15.11	30.00	
238 U	# 3	159	44794.3	0.0000	0.7475	ppb	3.60	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	533374.00	0.84	811155.50	65.8	60 - 125	
45 Sc # 1	1150065.90	1.90	1299874.00	88.5	60 - 125	
45 Sc # 2	246675.80	0.18	282959.88	87.2	60 - 125	
45 Sc # 3	2355194.30	0.28	2622763.00	89.8	60 - 125	
72 Ge # 1	321767.06	1.07	373453.66	86.2	60 - 125	
72 Ge # 2	140383.00	0.14	157911.92	88.9	60 - 125	
72 Ge # 3	592412.50	1.05	650916.69	91.0	60 - 125	
115 In # 3	4541487.50	0.39	4753398.50	95.5	60 - 125	
159 Tb # 3	6962600.50	1.20	6916590.50	100.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04027.D\F6E04027.D#
Date Acquired: May 4 2016 05:01 pm
Operator: CCapul
Sample Name: CCV2
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 04 2016 03:42 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.84 ppb	0.33	25.00	90 - 110	
9 Be	27.23 ppb	2.11	25.00	90 - 110	
11 B	51.91 ppb	3.47	50.00	90 - 110	
23 Na	23210.00 ppb	0.91	25000.00	90 - 110	
24 Mg	22650.00 ppb	1.83	25000.00	90 - 110	
27 Al	22730.00 ppb	1.33	25000.00	90 - 110	
28 Si	2323.00 ppb	1.40	2500.00	90 - 110	
31 P	236.10 ppb	1.43	250.00	90 - 110	
39 K	24000.00 ppb	0.29	25000.00	90 - 110	
40 Ca	23920.00 ppb	0.81	25000.00	90 - 110	
47 Ti	247.60 ppb	2.17	250.00	90 - 110	
51 V	261.10 ppb	0.40	250.00	90 - 110	
52 Cr	258.50 ppb	0.54	250.00	90 - 110	
55 Mn	1530.00 ppb	3.16	1500.00	90 - 110	
56 Fe	25590.00 ppb	1.22	25000.00	90 - 110	
59 Co	254.80 ppb	2.76	250.00	90 - 110	
60 Ni	257.70 ppb	0.48	250.00	90 - 110	
63 Cu	245.30 ppb	0.98	250.00	90 - 110	
66 Zn	246.90 ppb	1.53	250.00	90 - 110	
75 As	248.70 ppb	0.93	250.00	90 - 110	
78 Se	254.30 ppb	1.63	250.00	90 - 110	
88 Sr	258.20 ppb	1.12	250.00	90 - 110	
90 Zr	25.51 ppb	1.20	25.00	90 - 110	
95 Mo	248.90 ppb	1.98	250.00	90 - 110	
107 Ag	25.12 ppb	1.76	25.00	90 - 110	
111 Cd	247.80 ppb	1.40	250.00	90 - 110	
118 Sn	251.30 ppb	0.93	250.00	90 - 110	
121 Sb	251.10 ppb	1.27	250.00	90 - 110	
137 Ba	509.90 ppb	1.35	500.00	90 - 110	
182 W	24.39 ppb	0.94	25.00	90 - 110	
205 Tl	238.50 ppb	1.21	250.00	90 - 110	
208 Pb	224.10 ppb	1.27	250.00	90 - 110	Fail
235 U	1.70 ppb	0.62	1.80	90 - 110	
238 U	245.20 ppb	1.92	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	541629.38	1.12	811155.50	66.8	60 - 125	
45 Sc	1028819.70	3.79	1299874.00	79.1	60 - 125	
45 Sc	234618.30	0.45	282959.88	82.9	60 - 125	
45 Sc	2256647.00	1.13	2622763.00	86.0	60 - 125	
72 Ge	308144.13	1.97	373453.66	82.5	60 - 125	
72 Ge	137713.78	0.79	157911.92	87.2	60 - 125	
72 Ge	573373.25	1.01	650916.69	88.1	60 - 125	
115 In	4259117.00	0.84	4753398.50	89.6	60 - 125	
159 Tb	6702910.50	0.63	6916590.50	96.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04028.D\F6E04028.D#
Date Acquired:	May 4 2016 05:05 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB2
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1257	ppb	39688.3	85.20	0.20	
9 Be	-0.0031	ppb	31.1	105.19	0.10	
11 B	-1.8480	ppb	4030.7	5.71	5.00	
23 Na	-0.4080	ppb	40564.1	119.83	40.00	
24 Mg	0.2516	ppb	3247.1	9.48	10.00	
27 Al	0.1868	ppb	2910.4	9.59	20.00	
28 Si	-1.1260	ppb	3397.2	18.68	20.00	
31 P	-1.6050	ppb	8163.8	34.43	10.00	
39 K	-2.9780	ppb	31180.4	3.89	20.00	
40 Ca	1.0180	ppb	15615.6	9.73	25.00	
47 Ti	-0.0008	ppb	41.1	838.14	0.50	
51 V	-0.0169	ppb	1470.5	59.30	0.50	
52 Cr	-0.0196	ppb	437.6	23.00	0.20	
55 Mn	0.0155	ppb	1521.2	25.22	0.20	
56 Fe	2.4430	ppb	27187.5	9.09	10.00	
59 Co	-0.0014	ppb	190.0	40.68	0.20	
60 Ni	0.0015	ppb	41.6	168.33	0.20	
63 Cu	0.0024	ppb	216.0	248.32	0.40	
66 Zn	0.0168	ppb	346.7	19.21	2.00	
75 As	0.0028	ppb	61.3	441.08	0.20	
78 Se	0.0521	ppb	24.9	7.78	0.20	
88 Sr	-0.0098	ppb	413.4	12.68	0.20	
90 Zr	0.0025	ppb	275.6	52.38	2.00	
95 Mo	0.0656	ppb	482.2	11.68	0.40	
107 Ag	0.0006	ppb	33.3	86.95	0.20	
111 Cd	0.0005	ppb	3.3	410.13	0.20	
118 Sn	0.0347	ppb	464.5	16.02	0.20	
121 Sb	0.2451	ppb	4543.1	4.45	0.40	
137 Ba	-0.0001	ppb	52.2	5460.10	0.20	
182 W	0.0097	ppb	271.1	3.16	1.00	
205 Tl	0.0049	ppb	277.8	29.14	0.20	
208 Pb	0.0032	ppb	533.4	24.05	0.10	
235 U	0.0000	ppb	12.2	354.92	1.00	
238 U	0.0115	ppb	703.4	12.18	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	578982.6	0.50	811155.50	71.4	60 - 125	
45 Sc	1136003.0	1.03	1299874.00	87.4	60 - 125	
45 Sc	245191.8	1.18	282959.88	86.7	60 - 125	
45 Sc	2288609.5	1.24	2622763.00	87.3	60 - 125	
72 Ge	341805.4	0.37	373453.66	91.5	60 - 125	
72 Ge	145605.8	0.77	157911.92	92.2	60 - 125	
72 Ge	597963.6	0.03	650916.69	91.9	60 - 125	
115 In	4646326.5	0.61	4753398.50	97.7	60 - 125	
159 Tb	6966613.5	0.89	6916590.50	100.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04029.D\F6E04029.D#
Date Acquired:	May 4 2016 05:09 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-05
Misc Info:	
Vial Number:	2111
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	114533.9	0.0000	13.6900	ppb	0.48	50.00	
9 Be	# 3	6	2678.1	0.0000	1.1140	ppb	1.23	50.00	
11 B	# 3	6	12067.5	0.0000	3.0460	ppb	5.42	100.00	
23 Na	# 1	45	156134.8	0.0000	41.4300	ppb	3.34	50000.00	
24 Mg	# 3	45	21268030.0	0.0000	2372.0000	ppb	2.06	50000.00	
27 Al	# 3	45	181321410.0	0.0000	14850.0000	ppb	1.68	50000.00	
28 Si	# 1	45	2711247.0	0.0000	2796.0000	ppb	0.99	5000.00	
31 P	# 3	45	208951.7	0.0000	293.2000	ppb	0.58	500.00	
39 K	# 2	45	2122069.0	0.0000	3261.0000	ppb	1.97	50000.00	
40 Ca	# 1	45	21814110.0	0.0000	3242.0000	ppb	0.60	50000.00	
47 Ti	# 3	45	398683.4	0.0000	267.3000	ppb	0.69	500.00	
51 V	# 2	45	173213.8	0.0000	39.7200	ppb	0.56	500.00	
52 Cr	# 2	45	102198.3	0.0000	20.2700	ppb	1.17	500.00	
55 Mn	# 3	45	11539270.0	0.0000	455.2000	ppb	1.88	3000.00	
56 Fe	# 1	45	197151200.0	0.0000	19280.0000	ppb	0.79	50000.00	
59 Co	# 3	45	166526.5	0.0000	8.7280	ppb	1.93	500.00	
60 Ni	# 2	45	29129.8	0.0000	16.5500	ppb	1.53	500.00	
63 Cu	# 2	45	75737.3	0.0000	16.3100	ppb	1.14	500.00	
66 Zn	# 3	72	162251.9	0.0000	46.9900	ppb	1.35	500.00	
75 As	# 2	72	5352.1	0.0000	6.3120	ppb	1.16	500.00	
78 Se	# 1	72	145.8	0.0000	0.3484	ppb	6.19	500.00	
88 Sr	# 3	72	915255.2	0.0000	27.2300	ppb	0.75	500.00	
90 Zr	# 3	72	99401.3	0.0000	4.3170	ppb	1.44	50.00	
95 Mo	# 3	115	4794.3	0.0000	0.7008	ppb	1.75	500.00	
107 Ag	# 3	115	1344.6	0.0000	0.0762	ppb	1.02	50.00	
111 Cd	# 3	115	1906.3	0.0000	0.4609	ppb	6.52	500.00	
118 Sn	# 3	115	45923.4	0.0000	4.0080	ppb	1.98	500.00	
121 Sb	# 3	115	8817.5	0.0000	0.5312	ppb	3.50	500.00	
137 Ba	# 3	115	863647.3	0.0000	144.8000	ppb	2.19	1000.00	
182 W	# 3	159	2163.6	0.0000	0.1174	ppb	3.74	50.00	
205 Tl	# 3	159	9196.8	0.0000	0.2555	ppb	0.52	500.00	
208 Pb	# 3	159	909083.0	0.0000	17.2100	ppb	0.53	500.00	
235 U	# 3	159	311.1	0.0000	0.0047	ppb	4.98	30.00	
238 U	# 3	159	40704.2	0.0000	0.6902	ppb	1.22	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	529513.56	0.25	811155.50	65.3	60 - 125	
45 Sc # 1	1131967.90	1.52	1299874.00	87.1	60 - 125	
45 Sc # 2	242471.89	0.58	282959.88	85.7	60 - 125	
45 Sc # 3	2270862.00	1.34	2622763.00	86.6	60 - 125	
72 Ge # 1	325280.53	0.13	373453.66	87.1	60 - 125	
72 Ge # 2	140546.13	0.95	157911.92	89.0	60 - 125	
72 Ge # 3	570738.63	1.63	650916.69	87.7	60 - 125	
115 In # 3	4483379.00	1.03	4753398.50	94.3	60 - 125	
159 Tb # 3	6850066.50	0.84	6916590.50	99.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04030.D\F6E04030.D#
Date Acquired:	May 4 2016 05:13 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-06
Misc Info:	
Vial Number:	2112
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	89709.4	0.0000	11.8800	ppb	0.79	50.00	
9 Be	# 3	6	1701.3	0.0000	0.8165	ppb	3.08	50.00	
11 B	# 3	6	12186.5	0.0000	4.2510	ppb	2.93	100.00	
23 Na	# 1	45	305016.6	0.0000	115.0000	ppb	1.21	50000.00	
24 Mg	# 3	45	41893540.0	0.0000	5289.0000	ppb	0.58	50000.00	
27 Al	# 3	45	119449800.0	0.0000	11080.0000	ppb	0.18	50000.00	
28 Si	# 1	45	2548228.0	0.0000	3098.0000	ppb	1.33	5000.00	
31 P	# 3	45	102988.3	0.0000	157.6000	ppb	1.37	500.00	
39 K	# 2	45	1336142.0	0.0000	2319.0000	ppb	1.00	50000.00	
40 Ca	# 1	45	1739438000.0	0.0000	304800.0000	ppb	0.55	50000.00	>LRS
47 Ti	# 3	45	214506.4	0.0000	162.8000	ppb	0.64	500.00	
51 V	# 2	45	121674.1	0.0000	31.6400	ppb	1.03	500.00	
52 Cr	# 2	45	52420.0	0.0000	11.7800	ppb	1.21	500.00	
55 Mn	# 3	45	2477084.0	0.0000	110.6000	ppb	0.86	3000.00	
56 Fe	# 1	45	91429776.0	0.0000	10540.0000	ppb	1.52	50000.00	
59 Co	# 3	45	108245.3	0.0000	6.4190	ppb	1.27	500.00	
60 Ni	# 2	45	22651.9	0.0000	14.6300	ppb	1.58	500.00	
63 Cu	# 2	45	24758.0	0.0000	6.0320	ppb	0.96	500.00	
66 Zn	# 3	72	74974.4	0.0000	24.5200	ppb	0.39	500.00	
75 As	# 2	72	6374.8	0.0000	8.6030	ppb	1.34	500.00	
78 Se	# 1	72	49.8	0.0000	0.1344	ppb	7.46	500.00	
88 Sr	# 3	72	9827977.0	0.0000	331.0000	ppb	0.35	500.00	
90 Zr	# 3	72	118276.2	0.0000	5.8140	ppb	0.99	50.00	
95 Mo	# 3	115	2494.8	0.0000	0.4081	ppb	2.63	500.00	
107 Ag	# 3	115	390.0	0.0000	0.0239	ppb	7.44	50.00	
111 Cd	# 3	115	1301.6	0.0000	0.3531	ppb	6.62	500.00	
118 Sn	# 3	115	34054.7	0.0000	3.3350	ppb	1.32	500.00	
121 Sb	# 3	115	5996.0	0.0000	0.3964	ppb	0.41	500.00	
137 Ba	# 3	115	1259106.0	0.0000	236.9000	ppb	1.20	1000.00	
182 W	# 3	159	1836.9	0.0000	0.1105	ppb	2.24	50.00	
205 Tl	# 3	159	5536.9	0.0000	0.1701	ppb	3.56	500.00	
208 Pb	# 3	159	355765.5	0.0000	7.4860	ppb	0.99	500.00	
235 U	# 3	159	286.7	0.0000	0.0048	ppb	8.94	30.00	
238 U	# 3	159	36108.0	0.0000	0.6807	ppb	1.73	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	456572.34	0.56	811155.50	56.3	60 - 125	ISFail
45 Sc # 1	960390.00	2.26	1299874.00	73.9	60 - 125	
45 Sc # 2	213345.13	1.03	282959.88	75.4	60 - 125	
45 Sc # 3	2005696.30	0.30	2622763.00	76.5	60 - 125	
72 Ge # 1	281087.88	0.83	373453.66	75.3	60 - 125	
72 Ge # 2	123151.76	0.32	157911.92	78.0	60 - 125	
72 Ge # 3	504480.25	0.20	650916.69	77.5	60 - 125	
115 In # 3	3994705.00	1.15	4753398.50	84.0	60 - 125	
159 Tb # 3	6161197.00	0.66	6916590.50	89.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04031.D\F6E04031.D#
Date Acquired:	May 4 2016 05:18 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-07
Misc Info:	
Vial Number:	2201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	118583.2	0.0000	17.1400	ppb	0.13	50.00	
9 Be	# 3	6	2693.7	0.0000	1.2720	ppb	1.69	50.00	
11 B	# 3	6	17765.6	0.0000	7.7580	ppb	2.73	100.00	
23 Na	# 1	45	1640170.0	0.0000	602.8000	ppb	2.37	50000.00	
24 Mg	# 3	45	45750848.0	0.0000	5358.0000	ppb	0.72	50000.00	
27 Al	# 3	45	156366900.0	0.0000	13450.0000	ppb	0.99	50000.00	
28 Si	# 1	45	2586494.0	0.0000	2779.0000	ppb	2.29	5000.00	
31 P	# 3	45	350856.0	0.0000	527.4000	ppb	0.39	500.00	>LRS
39 K	# 2	45	2083763.0	0.0000	3346.0000	ppb	0.53	50000.00	
40 Ca	# 1	45	631351170.0	0.0000	97790.0000	ppb	1.15	50000.00	>LRS
47 Ti	# 3	45	375364.1	0.0000	264.3000	ppb	0.51	500.00	
51 V	# 2	45	196119.5	0.0000	47.0400	ppb	1.12	500.00	
52 Cr	# 2	45	79204.0	0.0000	16.3900	ppb	0.80	500.00	
55 Mn	# 3	45	7070560.0	0.0000	292.9000	ppb	0.92	3000.00	
56 Fe	# 1	45	156362800.0	0.0000	15930.0000	ppb	1.44	50000.00	
59 Co	# 3	45	141703.3	0.0000	7.7980	ppb	0.87	500.00	
60 Ni	# 2	45	27635.6	0.0000	16.4000	ppb	0.59	500.00	
63 Cu	# 2	45	49913.2	0.0000	11.2100	ppb	1.90	500.00	
66 Zn	# 3	72	131965.6	0.0000	39.9600	ppb	0.67	500.00	
75 As	# 2	72	4517.2	0.0000	5.5670	ppb	1.23	500.00	
78 Se	# 1	72	80.0	0.0000	0.1964	ppb	2.67	500.00	
88 Sr	# 3	72	7319777.0	0.0000	227.9000	ppb	0.54	500.00	
90 Zr	# 3	72	234501.9	0.0000	10.6700	ppb	1.71	50.00	
95 Mo	# 3	115	4297.5	0.0000	0.6577	ppb	2.51	500.00	
107 Ag	# 3	115	840.1	0.0000	0.0494	ppb	7.27	50.00	
111 Cd	# 3	115	2012.7	0.0000	0.5096	ppb	4.84	500.00	
118 Sn	# 3	115	39507.0	0.0000	3.6100	ppb	2.17	500.00	
121 Sb	# 3	115	6471.7	0.0000	0.3995	ppb	3.60	500.00	
137 Ba	# 3	115	2022936.0	0.0000	355.2000	ppb	0.76	1000.00	
182 W	# 3	159	2089.1	0.0000	0.1155	ppb	3.66	50.00	
205 Tl	# 3	159	9190.2	0.0000	0.2605	ppb	1.87	500.00	
208 Pb	# 3	159	628110.0	0.0000	12.1300	ppb	1.05	500.00	
235 U	# 3	159	318.9	0.0000	0.0050	ppb	16.91	30.00	
238 U	# 3	159	42426.4	0.0000	0.7338	ppb	1.21	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	467171.50	1.22	811155.50	57.6	60 - 125	ISFail
45 Sc # 1	1086555.60	1.21	1299874.00	83.6	60 - 125	
45 Sc # 2	232126.34	1.20	282959.88	82.0	60 - 125	
45 Sc # 3	2162169.00	1.12	2622763.00	82.4	60 - 125	
72 Ge # 1	312880.31	0.57	373453.66	83.8	60 - 125	
72 Ge # 2	134296.73	1.23	157911.92	85.0	60 - 125	
72 Ge # 3	545633.75	0.69	650916.69	83.8	60 - 125	
115 In # 3	4280975.00	0.34	4753398.50	90.1	60 - 125	
159 Tb # 3	6715071.50	0.40	6916590.50	97.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04032.D\F6E04032.D#
Date Acquired:	May 4 2016 05:22 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-08
Misc Info:	
Vial Number:	2202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	88374.3	0.0000	10.6300	ppb	2.17	50.00	
9 Be	# 3	6	2055.8	0.0000	0.9345	ppb	0.85	50.00	
11 B	# 3	6	9283.2	0.0000	1.9390	ppb	4.84	100.00	
23 Na	# 1	45	135446.8	0.0000	35.3800	ppb	1.23	50000.00	
24 Mg	# 3	45	14966450.0	0.0000	1743.0000	ppb	1.87	50000.00	
27 Al	# 3	45	132140800.0	0.0000	11300.0000	ppb	1.58	50000.00	
28 Si	# 1	45	2528659.0	0.0000	2684.0000	ppb	0.94	5000.00	
31 P	# 3	45	141690.7	0.0000	203.7000	ppb	1.93	500.00	
39 K	# 2	45	1643902.0	0.0000	2617.0000	ppb	1.94	50000.00	
40 Ca	# 1	45	14598940.0	0.0000	2233.0000	ppb	0.87	50000.00	
47 Ti	# 3	45	353906.9	0.0000	247.8000	ppb	1.15	500.00	
51 V	# 2	45	140155.2	0.0000	33.3700	ppb	0.91	500.00	
52 Cr	# 2	45	81495.6	0.0000	16.7900	ppb	0.08	500.00	
55 Mn	# 3	45	8793366.0	0.0000	362.2000	ppb	2.36	3000.00	
56 Fe	# 1	45	157814000.0	0.0000	15890.0000	ppb	0.42	50000.00	
59 Co	# 3	45	130415.4	0.0000	7.1360	ppb	3.20	500.00	
60 Ni	# 2	45	22554.2	0.0000	13.3200	ppb	1.12	500.00	
63 Cu	# 2	45	56716.2	0.0000	12.6900	ppb	0.75	500.00	
66 Zn	# 3	72	118541.1	0.0000	34.3600	ppb	1.17	500.00	
75 As	# 2	72	4376.0	0.0000	5.2150	ppb	1.74	500.00	
78 Se	# 1	72	114.9	0.0000	0.2749	ppb	2.86	500.00	
88 Sr	# 3	72	627465.9	0.0000	18.6900	ppb	0.51	500.00	
90 Zr	# 3	72	79688.3	0.0000	3.4650	ppb	2.06	50.00	
95 Mo	# 3	115	3589.5	0.0000	0.5313	ppb	4.50	500.00	
107 Ag	# 3	115	897.8	0.0000	0.0512	ppb	6.64	50.00	
111 Cd	# 3	115	1465.8	0.0000	0.3592	ppb	4.22	500.00	
118 Sn	# 3	115	43997.0	0.0000	3.8920	ppb	0.40	500.00	
121 Sb	# 3	115	6708.5	0.0000	0.4010	ppb	2.24	500.00	
137 Ba	# 3	115	602576.6	0.0000	102.4000	ppb	2.50	1000.00	
182 W	# 3	159	1851.3	0.0000	0.0987	ppb	6.57	50.00	
205 Tl	# 3	159	7294.5	0.0000	0.2003	ppb	1.70	500.00	
208 Pb	# 3	159	675122.1	0.0000	12.6700	ppb	0.74	500.00	
235 U	# 3	159	251.1	0.0000	0.0037	ppb	4.17	30.00	
238 U	# 3	159	30805.4	0.0000	0.5180	ppb	2.37	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	483228.53	1.27	811155.50	59.6	60 - 125	ISFail
45 Sc # 1	1099674.90	0.58	1299874.00	84.6	60 - 125	
45 Sc # 2	233163.05	0.24	282959.88	82.4	60 - 125	
45 Sc # 3	2175014.30	2.24	2622763.00	82.9	60 - 125	
72 Ge # 1	323508.63	0.46	373453.66	86.6	60 - 125	
72 Ge # 2	138741.05	0.45	157911.92	87.9	60 - 125	
72 Ge # 3	569735.44	0.43	650916.69	87.5	60 - 125	
115 In # 3	4423181.50	0.95	4753398.50	93.1	60 - 125	
159 Tb # 3	6907996.50	1.00	6916590.50	99.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E04.B\F6E04033.D\F6E04033.D#
Date Acquired:	May 4 2016 05:26 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E014-09
Misc Info:	
Vial Number:	2203
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 04 2016 03:42 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	84420.6	0.0000	11.7000	ppb	1.30	50.00	
9 Be	# 3	6	1902.4	0.0000	0.9640	ppb	5.09	50.00	
11 B	# 3	6	11350.3	0.0000	4.0890	ppb	5.76	100.00	
23 Na	# 1	45	390260.8	0.0000	145.0000	ppb	1.19	50000.00	
24 Mg	# 3	45	33603712.0	0.0000	4243.0000	ppb	3.28	50000.00	
27 Al	# 3	45	134971390.0	0.0000	12520.0000	ppb	3.04	50000.00	
28 Si	# 1	45	3191774.0	0.0000	3736.0000	ppb	0.96	5000.00	
31 P	# 3	45	135572.2	0.0000	211.8000	ppb	1.91	500.00	
39 K	# 2	45	1412689.0	0.0000	2487.0000	ppb	0.48	50000.00	
40 Ca	# 1	45	1438495000.0	0.0000	242600.0000	ppb	0.82	50000.00	>LRS
47 Ti	# 3	45	269546.8	0.0000	204.6000	ppb	0.45	500.00	
51 V	# 2	45	115730.1	0.0000	30.4700	ppb	1.37	500.00	
52 Cr	# 2	45	61530.0	0.0000	14.0200	ppb	1.13	500.00	
55 Mn	# 3	45	2405712.0	0.0000	107.4000	ppb	0.71	3000.00	
56 Fe	# 1	45	115831300.0	0.0000	12850.0000	ppb	1.14	50000.00	
59 Co	# 3	45	106422.9	0.0000	6.3100	ppb	1.14	500.00	
60 Ni	# 2	45	25289.1	0.0000	16.5500	ppb	0.79	500.00	
63 Cu	# 2	45	34523.8	0.0000	8.5400	ppb	1.25	500.00	
66 Zn	# 3	72	106430.8	0.0000	34.5200	ppb	1.39	500.00	
75 As	# 2	72	5060.0	0.0000	6.8070	ppb	0.69	500.00	
78 Se	# 1	72	62.2	0.0000	0.1633	ppb	2.75	500.00	
88 Sr	# 3	72	6676970.0	0.0000	222.8000	ppb	1.01	500.00	
90 Zr	# 3	72	121382.3	0.0000	5.9120	ppb	0.94	50.00	
95 Mo	# 3	115	2674.8	0.0000	0.4327	ppb	3.44	500.00	
107 Ag	# 3	115	454.5	0.0000	0.0278	ppb	3.82	50.00	
111 Cd	# 3	115	1710.7	0.0000	0.4588	ppb	2.79	500.00	
118 Sn	# 3	115	33927.7	0.0000	3.2850	ppb	0.65	500.00	
121 Sb	# 3	115	5117.8	0.0000	0.3286	ppb	2.88	500.00	
137 Ba	# 3	115	1028584.0	0.0000	191.4000	ppb	1.50	1000.00	
182 W	# 3	159	1639.1	0.0000	0.0980	ppb	5.68	50.00	
205 Tl	# 3	159	6330.6	0.0000	0.1949	ppb	2.15	500.00	
208 Pb	# 3	159	410689.1	0.0000	8.6420	ppb	0.95	500.00	
235 U	# 3	159	262.2	0.0000	0.0044	ppb	3.28	30.00	
238 U	# 3	159	32961.7	0.0000	0.6213	ppb	2.16	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	433824.41	1.20	811155.50	53.5	60 - 125	ISFail
45 Sc # 1	997657.81	0.44	1299874.00	76.8	60 - 125	
45 Sc # 2	210595.69	0.86	282959.88	74.4	60 - 125	
45 Sc # 3	2006273.80	1.53	2622763.00	76.5	60 - 125	
72 Ge # 1	291080.38	0.57	373453.66	77.9	60 - 125	
72 Ge # 2	123300.28	0.32	157911.92	78.1	60 - 125	
72 Ge # 3	509202.66	1.23	650916.69	78.2	60 - 125	
115 In # 3	4041008.30	1.07	4753398.50	85.0	60 - 125	
159 Tb # 3	6161480.50	1.22	6916590.50	89.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E04.B\F6E04034.D\F6E04034.D#
Date Acquired: May 4 2016 05:31 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E014-10
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 04 2016 03:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	90985.5	0.0000	13.0500	ppb	3.04	50.00	
9 Be	# 3	6	1950.2	0.0000	0.9861	ppb	3.27	50.00	
11 B	# 3	6	13036.2	0.0000	5.2690	ppb	3.25	100.00	
23 Na	# 1	45	991034.0	0.0000	393.3000	ppb	0.35	50000.00	
24 Mg	# 3	45	40267960.0	0.0000	5097.0000	ppb	2.08	50000.00	
27 Al	# 3	45	96296600.0	0.0000	8953.0000	ppb	2.20	50000.00	
28 Si	# 1	45	4389946.0	0.0000	5164.0000	ppb	0.08	5000.00	>LRS
31 P	# 3	45	162954.1	0.0000	258.0000	ppb	0.88	500.00	
39 K	# 2	45	1186743.0	0.0000	2068.0000	ppb	0.92	50000.00	
40 Ca	# 1	45	1613250900.0	0.0000	273400.0000	ppb	0.36	50000.00	>LRS
47 Ti	# 3	45	237793.6	0.0000	181.0000	ppb	0.91	500.00	
51 V	# 2	45	91757.6	0.0000	23.9400	ppb	1.96	500.00	
52 Cr	# 2	45	45633.7	0.0000	10.3100	ppb	1.68	500.00	
55 Mn	# 3	45	2612335.0	0.0000	116.9000	ppb	0.39	3000.00	
56 Fe	# 1	45	78218088.0	0.0000	8720.0000	ppb	0.42	50000.00	
59 Co	# 3	45	142069.2	0.0000	8.4510	ppb	0.41	500.00	
60 Ni	# 2	45	20851.7	0.0000	13.5600	ppb	2.01	500.00	
63 Cu	# 2	45	30545.0	0.0000	7.5050	ppb	2.00	500.00	
66 Zn	# 3	72	124336.0	0.0000	40.5900	ppb	0.45	500.00	
75 As	# 2	72	3533.3	0.0000	4.7150	ppb	1.62	500.00	
78 Se	# 1	72	66.7	0.0000	0.1765	ppb	7.59	500.00	
88 Sr	# 3	72	9679745.0	0.0000	325.0000	ppb	0.45	500.00	
90 Zr	# 3	72	133537.4	0.0000	6.5450	ppb	1.24	50.00	
95 Mo	# 3	115	2581.4	0.0000	0.4167	ppb	1.01	500.00	
107 Ag	# 3	115	635.6	0.0000	0.0393	ppb	8.76	50.00	
111 Cd	# 3	115	1999.8	0.0000	0.5353	ppb	1.34	500.00	
118 Sn	# 3	115	32397.4	0.0000	3.1300	ppb	1.30	500.00	
121 Sb	# 3	115	4839.9	0.0000	0.3078	ppb	14.81	500.00	
137 Ba	# 3	115	1032552.0	0.0000	191.7000	ppb	0.75	1000.00	
182 W	# 3	159	3107.1	0.0000	0.1876	ppb	1.16	50.00	
205 Tl	# 3	159	7211.1	0.0000	0.2189	ppb	1.74	500.00	
208 Pb	# 3	159	390542.6	0.0000	8.0910	ppb	0.81	500.00	
235 U	# 3	159	347.8	0.0000	0.0058	ppb	9.50	30.00	
238 U	# 3	159	49365.1	0.0000	0.9163	ppb	0.87	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	434867.72	1.08	811155.50	53.6	60 - 125	ISFail
45 Sc # 1	993052.56	1.25	1299874.00	76.4	60 - 125	
45 Sc # 2	211890.73	1.48	282959.88	74.9	60 - 125	
45 Sc # 3	2000422.90	0.65	2622763.00	76.3	60 - 125	
72 Ge # 1	289472.97	1.09	373453.66	77.5	60 - 125	
72 Ge # 2	123752.11	1.10	157911.92	78.4	60 - 125	
72 Ge # 3	506047.66	0.83	650916.69	77.7	60 - 125	
115 In # 3	4049167.00	0.77	4753398.50	85.2	60 - 125	
159 Tb # 3	6257655.00	0.66	6916590.50	90.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E04.B\F6E04004.D\F6E04004.D#

2 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 02515001

Book #: EIM-058
Batch: IME0065
Matrix: soil
Digestor ID: D

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	92 °C		92.8 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 03 - 05	4
LCS-2	SM6A - 007 - 02 - 30	4
MS	same spike soln & vol as LCS 1 & 2	
Blank Soil (Bead)	SM5A - 03 - 02 - 09	2g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 005 - 16 - 15	10
HCl	↓ - 15 - 24	5+5
H_2O_2	↓ - 14 - 23	10
HNO_3(1:1)	SM5B - 03 - 69 - 04	10
pH Strip (0-14)	NA	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 07
☑ Thermometer ID:	150590425/020
☑ Pipette ID:	142780357
☐ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP

Standard Added By: SP Witnessed By: [illegible]

Extract Rcvd By: [illegible] Checked By: [illegible]

EMAX LABORATORIES INC

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IME006S01	IME006SB	2.04	g	5/4/16 12:02	100	2	100	1	
16IME006S02	IME006SL	2.05	g	5/4/16 12:03	100	2	100	1	
16IME006S03	E014-01	2.03	g	5/4/16 12:04	100	2	100	0.985	
16IME006S04	E014-01M	2.06	g	5/4/16 12:05	100	2	100	0.971	
16IME006S05	E014-01D	2.02	g	5/4/16 12:06	100	2	100	0.99	
16IME006S06	E014-02	2.02	g	5/4/16 12:07	100	2	100	0.99	
16IME006S07	E014-03	2.03	g	5/4/16 12:08	100	2	100	0.985	
16IME006S08	E014-04	2.05	g	5/4/16 12:10	100	2	100	0.976	
16IME006S09	E014-05	2.04	g	5/4/16 12:11	100	2	100	0.98	
16IME006S10	E014-06	2.04	g	5/4/16 12:11	100	2	100	0.98	
16IME006S11	E014-07	2.04	g	5/4/16 12:12	100	2	100	0.98	
16IME006S12	E014-08	2.05	g	5/4/16 12:13	100	2	100	0.976	
16IME006S13	E014-09	2.04	g	5/4/16 12:14	100	2	100	0.98	
16IME006S14	E014-10	2.05	g	5/4/16 12:14	100	2	100	0.976	

SP 5/4/16

Balance ID: 10203192. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/4/16 12:15

Prepared By: SPara

☑ Digestion Ended @ 5/4/16 14:45

Checked By: [illegible]

Comments:

Date 5/4/16

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B005 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
CABAC-SB01-000.5	2/1/2016	2/2/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB01-005	2/1/2016	2/2/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB01-010	2/1/2016	2/2/2016	Soil	Arsenic and Thallium (6020A)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD-QSM deviations noted in the laboratory case narrative?		X	
Were DoD-QSM corrective actions followed if deviations were noted?			X
Were any issues noted in the cooler receipt form?	X		

The laboratory case narrative indicated no problems or discrepancies were encountered.

The cooler receipt form indicated the wrong COC was sent to the lab with the samples. CABAC-SB01-110 was MS/MSD volume for sample CABAC-SB01-010. Per the URS Chemist, analysis was cancelled for CABAC-SB01-110. These issues are discussed further in Section 2.0.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?		X
Were all sample identifications (IDs) documented correctly on sample labels?	X	
Did samples listed on COCs match the sample labels?		X
Were samples relinquished properly on the COC?	X	

The cooler receipt form indicated the wrong COC was sent to the lab with the samples. A QC split sample was collected on 2/1/2016. The COCs for the QC split sample and the samples in this SDG were switched in the coolers. The correct COC was forwarded to the lab by the URS Chemist. Sample CABAC-SB01-110 was MS/MSD volume for sample CABAC-SB01-010. Per the URS Chemist, analysis was cancelled for CABAC-SB01-110. No qualification of data was required.

3.0 Holding Time

Verification Criteria	Yes	No	N/A
Were all samples extracted/analyzed within holding time?	X		
Were samples outside holding time extracted/analyzed < 2x holding time?			X
Were samples outside holding time extracted/analyzed > 2x holding time?			X

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B005 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

4.0 Instrument Performance Check (Tuning)

Method 6020A Instrument Tuning Criteria (Filename)	**F6B02001.D**	
Instrument:	**F6**	
Date of Tuning:	**2/2/2016**	
	Yes	**No**
Was instrument tuning completed prior to calibration?	X	
Was mass calibration ≤ 0.1 amu from true value?	X	
Was resolution < 0.9 amu full width at 10% peak height?	X	
For stability, was the RSD ≤ 5% for at least four replicate analytes?	X	

5.0 Initial Calibration

Method 6020A Initial Calibration Criteria			
Instrument:	**F6**		
Date of Calibration:	**2/2/2016**		
	Yes	**No**	**N/A**
Was a minimum of two standards and a calibration blank used for ICAL?	X		
Was r ≥ 0.995?	X		

6.0 Initial Calibration Verification [(ICV) Second Source]

Method 6020A ICV Criteria (Filename)	**F6B02009.D**		
Instrument:	**F6**		
Date of Initial Calibration Verification	**2/2/2016**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV %recovery (%R) for all analytes within 90-110%?	X		

7.0 Continuing Calibration Verification (CCV)

Method 6020A CCV Criteria (Date)	**All CCVs on 2/2/2016**		
Instrument:	**F6**		
	Yes	**No**	**N/A**
Was the CCV analyzed after every 10 samples and at the end of the analysis sequence?	X		
Were the CCV %Rs for all analytes within 90-110%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B005 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

8.0 Blank Samples

Blank Criteria	Yes	No	N/A
Was a method blank analyzed with every preparatory batch?	X		
Were analytes detected > ½ the LOQ and > 1/10 the amount measured in any sample or 1/10 the regulatory limit?		X	
Were target analytes detected in method, trip or calibration blanks?		X	

9.0 Laboratory Control Sample (LCS)

LCS Criteria	Yes	No	N/A
Was an LCS analyzed with every preparatory batch?	X		
Were LCS recoveries within acceptance criteria listed in the UFP-QAPP?	X		

10.0 Internal Standards (IS)

Methods 6020A Criteria	Yes	No	N/A
For Method 6020A, were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standard areas within 30% to 120% of the ICAL midpoint standard area?	X		

11.0 Interference Check Sample (6020A Metals only)

Interference Check Sample Criteria	Yes	No	N/A
Were ICS-A and ICSAB samples analyzed at the beginning of the analytical run and every 12 hours?	X		
Was the ICS-A absolute value concentration for all non-spiked metals < LOD (unless they are a verified trace impurity form one of the spiked metals)	X		
Were the ICS-AB recoveries within ± 20%?	X		

12.0 Matrix Spike/Matrix Spike Duplicate

MS/MSD Criteria	Yes	No	N/A
Was a MS/MSD sample analyzed with every preparatory batch?	X		
Was a MS/MSD sample collected for this SDG?	X		
Were MS/MSD recoveries/RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB01-000.5 was spiked and analyzed for arsenic and thallium.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B005 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

13.0 Matrix Duplicate

Matrix Duplicate (MD) Criteria	Yes	No	N/A
Were MD samples analyzed with every preparatory batch?	X		
Were MD samples collected for this SDG?	X		
Were MD RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB01-000.5 was duplicated and analyzed for arsenic and thallium.

14.0 Dilution Test

Method 6020A Dilution Test Criteria	Yes	No	N/A
Was a dilution test sample analyzed with every preparatory batch?	X		
Was a dilution test sample analyzed from this SDG?	X		
Were metals concentrations > 50x the LOQ?	X		
Did the five-fold dilution agree within ± 10% of the original measurement?	X		
If the five-fold dilution did not agree within ± 10% of the original measurement, was a post digestion spike sample analyzed?	X		

Sample CABAC-SB01-000.5 was diluted and analyzed for arsenic and thallium.

15.0 Post Digestion Spike (PDS)

Method 6020A PDS Criteria	Yes	No	N/A
Was a PDS sample analyzed from this SDG?	X		
Was a PDS sample analyzed if the dilution test failed or metals concentrations were < 50 x the LOD?	X		
Were the PDS recoveries within 75-125%?	X		

Sample CABAC-SB01-000.5 was spiked and analyzed for arsenic and thallium.

16.0 Field Duplicate Samples

Field Duplicate Criteria	Yes	No	N/A
Were field duplicate samples collected for this SDG? (if yes, list below)		X	
Were parent sample / field duplicate RPDs ≤ 50% for soil analytes that had concentrations > 5x the LOQ.			X
Were the differences between the parent sample / field duplicate < 2x the LOQ for analytes that had concentrations < 5x the LOQ			X

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B005 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

17.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

18.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Were common laboratory contaminant concentrations < 2x the LOQ?			X
Was professional judgment used to qualify data (if yes, list below)?		X	

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B012 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
CABAC-SB10-000.5	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB10-004.5	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB10-010	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB06-000.5	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB06-005	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB06-010	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB07-000.5	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB07-003.5	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB07-010	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB08-000.5	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB08-005	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB08-010	2/2/2016	2/3/2016	Soil	Arsenic and Thallium (6020A)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD-QSM deviations noted in the laboratory case narrative?		X	
Were DoD-QSM corrective actions followed if deviations were noted?			X
Were any issues noted in the cooler receipt form?	X		

The laboratory case narrative indicated no problems or discrepancies were encountered.

The cooler receipt form indicated CABAC-SB07-110 was MS/MSD volume for sample CABAC-SB07-010. Per the URS Chemist, analysis was cancelled for CABAC-SB07-110. The collection time on the COC did not match the collection time on the sample label for two samples. One sample did not have a label on the jar. Corrections were made to the COC and sample labels; however, the corrections were not initialed and dated. These issues are discussed further in Section 2.0.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?		X
Were all sample identifications (IDs) documented correctly on sample labels?		X
Did samples listed on COCs match the sample labels?		X
Were samples relinquished properly on the COC?	X	

The cooler receipt form indicated CABAC-SB07-110 was MS/MSD volume for sample CABAC-SB07-010. Per the URS Chemist, analysis was cancelled for CABAC-SB07-110. The collection time on the COC did not match the collection time on the sample label for two samples. For sample CABAC-SB10-000.5, the COC indicated the collection time as 11:19;

however, the sample jar indicated the collection time as 11:16. Per the URS Chemist, the collection time on the label was correct. For sample CABAC-SB07-110, the COC indicated the collection time as 13:35; however, the sample jar indicated the collection time as 13:34. Per the URS Chemist, the collection time on the COC was correct. Sample CABAC-SB08-010 was sent to the lab without a label on the jar. The URS Chemist notified the lab of the correct sample ID. Corrections were made to the COC and sample labels; however, the corrections were not initialed and dated. No qualification of data was required.

3.0 Holding Time

Verification Criteria	Yes	No	N/A
Were all samples extracted/analyzed within holding time?	X		
Were samples outside holding time extracted/analyzed < 2x holding time?			X
Were samples outside holding time extracted/analyzed > 2x holding time?			X

4.0 Instrument Performance Check (Tuning)

Method 6020A Instrument Tuning Criteria (Filename)	F6B03001.D	
Instrument:	**F6**	
Date of Tuning:	**2/3/2016**	
	Yes	**No**
Was instrument tuning completed prior to calibration?	X	
Was mass calibration ≤ 0.1 amu from true value?	X	
Was resolution < 0.9 amu full width at 10% peak height?	X	
For stability, was the RSD ≤ 5% for at least four replicate analytes?	X	

5.0 Initial Calibration

Method 6020A Initial Calibration Criteria			
Instrument:	**F6**		
Date of Calibration:	**2/3/2016**		
	Yes	**No**	**N/A**
Was a minimum of two standards and a calibration blank used for ICAL?	X		
Was r ≥ 0.995?	X		

6.0 Initial Calibration Verification [(ICV) Second Source]

Method 6020A ICV Criteria (Filename)	F6B03009.D		
Instrument:	**F6**		
Date of Initial Calibration Verification	**2/3/2016**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV %recovery (%R) for all analytes within 90-110%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B012 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

7.0 Continuing Calibration Verification (CCV)

Method 6020A CCV Criteria (Date)	All CCVs on 2/3/2016		
Instrument:	F6		
	Yes	No	N/A
Was the CCV analyzed after every 10 samples and at the end of the analysis sequence?	X		
Were the CCV %Rs for all analytes within 90-110%?	X		

8.0 Blank Samples

Blank Criteria	Yes	No	N/A
Was a method blank analyzed with every preparatory batch?	X		
Were analytes detected > ½ the LOQ and > 1/10 the amount measured in any sample or 1/10 the regulatory limit?		X	
Were target analytes detected in method, trip or calibration blanks?		X	

9.0 Laboratory Control Sample (LCS)

LCS Criteria	Yes	No	N/A
Was an LCS analyzed with every preparatory batch?	X		
Were LCS recoveries within acceptance criteria listed in the UFP-QAPP?	X		

10.0 Internal Standards (IS)

Methods 6020A Criteria	Yes	No	N/A
For Method 6020A, were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standard areas within 30% to 120% of the ICAL midpoint standard area?	X		

11.0 Interference Check Sample (6020A Metals only)

Interference Check Sample Criteria	Yes	No	N/A
Were ICS-A and ICSAB samples analyzed at the beginning of the analytical run and every 12 hours?	X		
Was the ICS-A absolute value concentration for all non-spiked metals < LOD (unless they are a verified trace impurity form one of the spiked metals)	X		
Were the ICS-AB recoveries within ± 20%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B012 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

12.0 Matrix Spike/Matrix Spike Duplicate

MS/MSD Criteria	Yes	No	N/A
Was a MS/MSD sample analyzed with every preparatory batch?	X		
Was a MS/MSD sample collected for this SDG?	X		
Were MS/MSD recoveries/RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB07-010 was spiked and analyzed for arsenic and thallium.

13.0 Matrix Duplicate

Matrix Duplicate (MD) Criteria	Yes	No	N/A
Were MD samples analyzed with every preparatory batch?	X		
Were MD samples collected for this SDG?	X		
Were MD RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB07-010 was duplicated and analyzed for arsenic and thallium.

14.0 Dilution Test

Method 6020A Dilution Test Criteria	Yes	No	N/A
Was a dilution test sample analyzed with every preparatory batch?	X		
Was a dilution test sample analyzed from this SDG?	X		
Were metals concentrations > 50x the LOQ?	X		
Did the five-fold dilution agree within ± 10% of the original measurement?	X		
If the five-fold dilution did not agree within ± 10% of the original measurement, was a post digestion spike sample analyzed?	X		

Sample CABAC-SB07-010 was diluted and analyzed for arsenic and thallium.

15.0 Post Digestion Spike (PDS)

Method 6020A PDS Criteria	Yes	No	N/A
Was a PDS sample analyzed from this SDG?	X		
Was a PDS sample analyzed if the dilution test failed or metals concentrations were < 50 x the LOD?	X		
Were the PDS recoveries within 75-125%?	X		

Sample CABAC-SB07-010 was spiked and analyzed for arsenic and thallium.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16B012 **URS Chemist: Jennifer Zorinsky**
Date Verified: 2/16/2016 **URS ITR: Laura Deck**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

16.0 Field Duplicate Samples

Field Duplicate Criteria	Yes	No	N/A
Were field duplicate samples collected for this SDG? (if yes, list below)		X	
Were parent sample / field duplicate RPDs ≤ 50% for soil analytes that had concentrations > 5x the LOQ.			X
Were the differences between the parent sample / field duplicate < 2x the LOQ for analytes that had concentrations < 5x the LOQ			X

17.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

18.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Were common laboratory contaminant concentrations < 2x the LOQ?			X
Was professional judgment used to qualify data (if yes, list below)?		X	

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E003 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
CABAC-SB09-000.5	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB09-200.5	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB09-005	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB09-010	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB05-000.5	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB05-005	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB05-205	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB05-010	5/2/2016	5/3/2016	Soil	Arsenic and Thallium (6020A)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD-QSM deviations noted in the laboratory case narrative?		X	
Were DoD-QSM corrective actions followed if deviations were noted?			X
Were any issues noted in the cooler receipt form?	X		

The laboratory case narrative indicated no problems or discrepancies were encountered.

The cooler receipt form indicated corrections were made to the sample labels; however, the corrections were not initialed and dated. This issue is discussed further in Section 2.0.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?	X	
Were all sample identifications (IDs) documented correctly on sample labels?	X	
Did samples listed on COCs match the sample labels?	X	
Were samples relinquished properly on the COC?	X	

The cooler receipt form indicated corrections were made to the sample labels; however, the corrections were not initialed and dated. No qualification of data was required.

3.0 Holding Time

Verification Criteria	Yes	No	N/A
Were all samples extracted/analyzed within holding time?	X		
Were samples outside holding time extracted/analyzed < 2x holding time?			X
Were samples outside holding time extracted/analyzed > 2x holding time?			X

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E003 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

4.0 Instrument Performance Check (Tuning)

Method 6020A Instrument Tuning Criteria (Filename)	**F6E03001.D**	
Instrument:	**F6**	
Date of Tuning:	**5/3/2016**	
	Yes	**No**
Was instrument tuning completed prior to calibration?	X	
Was mass calibration ≤ 0.1 amu from true value?	X	
Was resolution < 0.9 amu full width at 10% peak height?	X	
For stability, was the RSD ≤ 5% for at least four replicate analytes?	X	

5.0 Initial Calibration

Method 6020A Initial Calibration Criteria			
Instrument:	**F6**		
Date of Calibration:	**5/3/2016**		
	Yes	**No**	**N/A**
Was a minimum of two standards and a calibration blank used for ICAL?	X		
Was r ≥ 0.995?	X		

6.0 Initial Calibration Verification [(ICV) Second Source]

Method 6020A ICV Criteria (Filename)	**F6E03009.D**		
Instrument:	**F6**		
Date of Initial Calibration Verification	**5/3/2016**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV %recovery (%R) for all analytes within 90-110%?	X		

7.0 Continuing Calibration Verification (CCV)

Method 6020A CCV Criteria (Date)	**All CCVs on 5/3/2016**		
Instrument:	**F6**		
	Yes	**No**	**N/A**
Was the CCV analyzed after every 10 samples and at the end of the analysis sequence?	X		
Were the CCV %Rs for all analytes within 90-110%?	X		

8.0 Blank Samples

Blank Criteria	**Yes**	**No**	**N/A**
Was a method blank analyzed with every preparatory batch?	X		
Were analytes detected > ½ the LOQ and > 1/10 the amount measured in any		X	

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E003 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Blank Criteria	Yes	No	N/A
sample or 1/10 the regulatory limit?			
Were target analytes detected in method, trip or calibration blanks?		X	

9.0 Laboratory Control Sample (LCS)

LCS Criteria	Yes	No	N/A
Was an LCS analyzed with every preparatory batch?	X		
Were LCS recoveries within acceptance criteria listed in the UFP-QAPP?	X		

10.0 Internal Standards (IS)

Methods 6020A Criteria	Yes	No	N/A
For Method 6020A, were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standard areas within 30% to 120% of the ICAL midpoint standard area?	X		

11.0 Interference Check Sample (6020A Metals only)

Interference Check Sample Criteria	Yes	No	N/A
Were ICS-A and ICSAB samples analyzed at the beginning of the analytical run and every 12 hours?	X		
Was the ICS-A absolute value concentration for all non-spiked metals < LOD (unless they are a verified trace impurity form one of the spiked metals)	X		
Were the ICS-AB recoveries within ± 20%?	X		

12.0 Matrix Spike/Matrix Spike Duplicate

MS/MSD Criteria	Yes	No	N/A
Was a MS/MSD sample analyzed with every preparatory batch?	X		
Was a MS/MSD sample collected for this SDG?	X		
Were MS/MSD recoveries/RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB09-000.5 was spiked and analyzed for arsenic and thallium.

13.0 Matrix Duplicate

Matrix Duplicate (MD) Criteria	Yes	No	N/A
Were MD samples analyzed with every preparatory batch?	X		
Were MD samples collected for this SDG?	X		
Were MD RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB09-000.5 was duplicated and analyzed for arsenic and thallium.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E003 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

14.0 Dilution Test

Method 6020A Dilution Test Criteria	Yes	No	N/A
Was a dilution test sample analyzed with every preparatory batch?	X		
Was a dilution test sample analyzed from this SDG?	X		
Were metals concentrations > 50x the LOQ?		X	
Did the five-fold dilution agree within ± 10% of the original measurement?	X		
If the five-fold dilution did not agree within ± 10% of the original measurement, was a post digestion spike sample analyzed?	X		

Sample CABAC-SB09-000.5 was diluted and analyzed for arsenic and thallium.

15.0 Post Digestion Spike (PDS)

Method 6020A PDS Criteria	Yes	No	N/A
Was a PDS sample analyzed from this SDG?	X		
Was a PDS sample analyzed if the dilution test failed or metals concentrations were < 50 x the LOD?	X		
Were the PDS recoveries within 75-125%?	X		

Sample CABAC-SB09-000.5 was spiked and analyzed for arsenic and thallium.

16.0 Field Duplicate Samples

Field Duplicate Criteria	Yes	No	N/A
Were field duplicate samples collected for this SDG? (if yes, list below)	X		
Were parent sample / field duplicate RPDs ≤ 50% for soil analytes that had concentrations > 5x the LOQ.	X		
Were the differences between the parent sample / field duplicate < 2x the LOQ for analytes that had concentrations < 5x the LOQ	X		

Parent Sample ID	Field Duplicate Sample ID
CABAC-SB09-000.5	CABAC-SB09-200.5
CABAC-SB05-005	CABAC-SB05-205

17.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E003 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

18.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Were common laboratory contaminant concentrations < 2x the LOQ?			X
Was professional judgment used to qualify data (if yes, list below)?		X	

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E014 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
CABAC-SB04-000.5	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB04-005	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB04-010	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB03-000.5	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB03-200.5	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB03-005	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB03-010	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB02-000.5	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB02-005	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)
CABAC-SB02-010	5/3/2016	5/4/2016	Soil	Arsenic and Thallium (6020A)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD-QSM deviations noted in the laboratory case narrative?		X	
Were DoD-QSM corrective actions followed if deviations were noted?			X
Were any issues noted in the cooler receipt form?	X		

The laboratory case narrative indicated no problems or discrepancies were encountered.

The cooler receipt form indicated corrections were made to the sample labels; however, the corrections were not initialed and dated. This issue is discussed further in Section 2.0.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?	X	
Were all sample identifications (IDs) documented correctly on sample labels?	X	
Did samples listed on COCs match the sample labels?	X	
Were samples relinquished properly on the COC?	X	

The cooler receipt form indicated corrections were made to the sample labels; however, the corrections were not initialed and dated. No qualification of data was required.

3.0 Holding Time

Verification Criteria	Yes	No	N/A
Were all samples extracted/analyzed within holding time?	X		
Were samples outside holding time extracted/analyzed < 2x holding time?			X
Were samples outside holding time extracted/analyzed > 2x holding time?			X

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E014 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

4.0 Instrument Performance Check (Tuning)

Method 6020A Instrument Tuning Criteria (Filename)	**F6E04001.D**	
Instrument:	**F6**	
Date of Tuning:	**5/4/2016**	
	Yes	**No**
Was instrument tuning completed prior to calibration?	X	
Was mass calibration ≤ 0.1 amu from true value?	X	
Was resolution < 0.9 amu full width at 10% peak height?	X	
For stability, was the RSD ≤ 5% for at least four replicate analytes?	X	

5.0 Initial Calibration

Method 6020A Initial Calibration Criteria			
Instrument:	**F6**		
Date of Calibration:	**5/4/2016**		
	Yes	**No**	**N/A**
Was a minimum of two standards and a calibration blank used for ICAL?	X		
Was r ≥ 0.995?	X		

6.0 Initial Calibration Verification [(ICV) Second Source]

Method 6020A ICV Criteria (Filename)	**F6E04009.D**		
Instrument:	**F6**		
Date of Initial Calibration Verification	**5/4/2016**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV %recovery (%R) for all analytes within 90-110%?	X		

7.0 Continuing Calibration Verification (CCV)

Method 6020A CCV Criteria (Date)	**All CCVs on 5/4/2016**		
Instrument:	**F6**		
	Yes	**No**	**N/A**
Was the CCV analyzed after every 10 samples and at the end of the analysis sequence?	X		
Were the CCV %Rs for all analytes within 90-110%?	X		

8.0 Blank Samples

Blank Criteria	**Yes**	**No**	**N/A**
Was a method blank analyzed with every preparatory batch?	X		
Were analytes detected > ½ the LOQ and > 1/10 the amount measured in any		X	

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E014 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Blank Criteria	Yes	No	N/A
sample or 1/10 the regulatory limit?			
Were target analytes detected in method, trip or calibration blanks?		X	

9.0 Laboratory Control Sample (LCS)

LCS Criteria	Yes	No	N/A
Was an LCS analyzed with every preparatory batch?	X		
Were LCS recoveries within acceptance criteria listed in the UFP-QAPP?	X		

10.0 Internal Standards (IS)

Methods 6020A Criteria	Yes	No	N/A
For Method 6020A, were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standard areas within 30% to 120% of the ICAL midpoint standard area?	X		

11.0 Interference Check Sample (6020A Metals only)

Interference Check Sample Criteria	Yes	No	N/A
Were ICS-A and ICSAB samples analyzed at the beginning of the analytical run and every 12 hours?	X		
Was the ICS-A absolute value concentration for all non-spiked metals < LOD (unless they are a verified trace impurity form one of the spiked metals)	X		
Were the ICS-AB recoveries within ± 20%?	X		

12.0 Matrix Spike/Matrix Spike Duplicate

MS/MSD Criteria	Yes	No	N/A
Was a MS/MSD sample analyzed with every preparatory batch?	X		
Was a MS/MSD sample collected for this SDG?	X		
Were MS/MSD recoveries/RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB04-000.5 was spiked and analyzed for arsenic and thallium.

13.0 Matrix Duplicate

Matrix Duplicate (MD) Criteria	Yes	No	N/A
Were MD samples analyzed with every preparatory batch?	X		
Were MD samples collected for this SDG?	X		
Were MD RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CABAC-SB04-000.5 was duplicated and analyzed for arsenic and thallium.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E014 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

14.0 Dilution Test

Method 6020A Dilution Test Criteria	Yes	No	N/A
Was a dilution test sample analyzed with every preparatory batch?	X		
Was a dilution test sample analyzed from this SDG?	X		
Were metals concentrations > 50x the LOQ?		X	
Did the five-fold dilution agree within ± 10% of the original measurement?	X		
If the five-fold dilution did not agree within ± 10% of the original measurement, was a post digestion spike sample analyzed?	X		

Sample CABAC-SB04-000.5 was diluted and analyzed for arsenic and thallium.

15.0 Post Digestion Spike (PDS)

Method 6020A PDS Criteria	Yes	No	N/A
Was a PDS sample analyzed from this SDG?	X		
Was a PDS sample analyzed if the dilution test failed or metals concentrations were < 50 x the LOD?	X		
Were the PDS recoveries within 75-125%?	X		

Sample CABAC-SB04-000.5 was spiked and analyzed for arsenic and thallium.

16.0 Field Duplicate Samples

Field Duplicate Criteria	Yes	No	N/A
Were field duplicate samples collected for this SDG? (if yes, list below)	X		
Were parent sample / field duplicate RPDs ≤ 50% for soil analytes that had concentrations > 5x the LOQ.	X		
Were the differences between the parent sample / field duplicate < 2x the LOQ for analytes that had concentrations < 5x the LOQ	X		

Parent Sample ID	Field Duplicate Sample ID
CABAC-SB03-000.5	CABAC-SB03-200.5

17.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E014 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/25/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

18.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Were common laboratory contaminant concentrations < 2x the LOQ?			X
Was professional judgment used to qualify data (if yes, list below)?		X	

C.2 – SD012

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E143**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E143**

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 06-07-2016
EMAX Batch No.: 16E143

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Laboratory Report
Project: CANNON AFB PBR

Enclosed is the Laboratory report for samples received on 05/17/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CA012-SS02-000.5	E143-01	05/14/16	SOIL	ARSENIC BY 6020
CA012-C85-SS01A-000.5	E143-02	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS03-000.5	E143-03	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS03-200.5	E143-04	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS04-000.5	E143-05	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS05-000.5	E143-06	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS06-000.5	E143-07	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS07-000.5	E143-08	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS08-000.5	E143-09	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS07-200.5	E143-10	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS09-000.5	E143-11	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS10-000.5	E143-12	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS11-000.5	E143-13	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS05-000.5MS	E143-06M	05/14/16	SOIL	ARSENIC BY 6020
CA012-SS05-000.5DUP	E143-06D	05/14/16	SOIL	ARSENIC BY 6020

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16E143

METHOD SW6020A
ARSENIC BY ICP-MS

A total of thirteen (13) soil samples were received on 05/17/16 to be analyzed for Arsenic by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source (ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME034SB - 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) LCS was analyzed. Arsenic was within LCS QC limits in IME034SL. 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) MS was analyzed. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC 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.

SAMPLE RECEIPT FORM 1 Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16E143
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7830 9074 7251	Recipient J. Hall
☐ EMAX Courier ☐ Client Delivery		Date 5/17/16 Time 0905

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: Sample 1 correction not initialed or dated

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ Plastic bags
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 1.7 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	*A - S/N* 130538505	*B - S/N* 140252070	*C - S/N* 140252067	*D - S/N* 150555630	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.** Fm 2/8/16

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2	2	D3	On label: CA012-CB5-SS01-000.5	R1
6, 8	6, 9	D10		R1
1	1	D10	In COC	R1

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND: ☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in _____	D13	Out of Holding Time	R1	Proceed as indicated in ☑ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	
D10	No initial/date on corrections in COC/label	D22		R10	
D11	Container count mismatch COC vs received	D23		R11	
D12	Container size mismatch COC vs received	D24		R12	

REVIEWS:

Sample Labeling [signature] **Date** 5/17/16 | [signature] 5/17/16

SRF [signature] **Date** 5/17/16

PM [signature] **Date** 5/17/16

ORIGIN ID:CVNA (402) 321-0977
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 16MAY16
ACTWGT: 55.20 LB
CAD: 006993959/SSFE1704
DIMS: 24x13x12 IN

BILL THIRD PARTY

TO **SAMPLE CUSTODIAN**
EMAX LABORATORIES
1835 W. 205TH STREET

TORRANCE CA 90501

(310) 618-0818 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0201 **7830 9074 7251**

TUE - 17 MAY 10:30A
PRIORITY OVERNIGHT

A7 HHRA

90501
CA-US **LAX**

URS Corporation
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CHAIN OF CUSTODY RECORD

16E143

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: CAFB, NM
Project Manager: Mike Sonderman
Sampler(s): K. Klocwo, J. Carrith

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	Arsenic 6020A									Preservative / Remarks
1	5/14/16	0910		X	CA012-SS02-000.5	Soil	1	4 oz Glass jar	X									
2	5/14/16	0915		X	CA012-C85-SS01A-000.5	Soil	1	4 oz Glass jar	X									
3	5/14/16	0920		X	CA012-SS03-000.5	Soil	1	4 oz Glass jar	X									
4	5/14/16	0922		X	CA012-SS03-200.5	Soil	1	4 oz Glass jar	X									
5	5/14/16	0925		X	CA012-SS04-000.5	Soil	1	4 oz Glass jar	X									
6	5/14/16	0930		X	CA012-SS05-000.5	Soil	2	4 oz Glass jar	X									MS/MSD
7	5/14/16	0932		X	CA012-SS06-000.5	Soil	1	4 oz Glass jar	X									
8	5/14/16	0940		X	CA012-SS07-000.5	Soil	1	4 oz Glass jar	X									
9	5/14/16	0945		X	CA012-SS08-000.5	Soil	1	4 oz Glass jar	X									
10	5/14/16	0942		X	CA012-SS07-200.5	Soil	1	4 oz Glass jar	X									
11	5/14/16	0950		X	CA012-SS09-000.5	Soil	1	4 oz Glass jar	X									
12	5/14/16	0955		X	CA012-SS10-000.5	Soil	1	4 oz Glass jar	X									
13	5/14/16	1000		X	CA012-SS11-000.5	Soil	1	4 oz Glass jar	X									

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by:	5/16/16	1630	Method of Shipment: FEDEX	
Received by:			Airbill No.: —	
Relinquished by:			Lab Address: EMAX Laboratories 1835 West 205th Street Torrance, CA 90501	
Received for Laboratory by:	5/17/16	0905		Temp - 1.7°

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 or estimated value.
*	*	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.

LAB CHRONICLE
ARSENIC BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16E143
Instrument ID : T-I98

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IME034SB	1	NA	05/26/1613:54	05/23/1614:40	98E13018	98E13016	IME034S	Method Blank
LCS1S	IME034SL	1	NA	05/26/1613:59	05/23/1614:40	98E13019	98E13016	IME034S	Lab Control Sample (LCS)
CA012-SS02-000.5	E143-01	0.985	6.5	05/26/1614:03	05/23/1614:40	98E13020	98E13016	IME034S	Field Sample
CA012-C85-SS01A-000.5	E143-02	0.976	21.2	05/26/1614:08	05/23/1614:40	98E13021	98E13016	IME034S	Field Sample
CA012-SS03-000.5	E143-03	0.976	2.1	05/26/1614:12	05/23/1614:40	98E13022	98E13016	IME034S	Field Sample
CA012-SS03-200.5	E143-04	0.976	1.9	05/26/1614:17	05/23/1614:40	98E13023	98E13016	IME034S	Field Sample
CA012-SS04-000.5	E143-05	0.966	2.9	05/26/1614:21	05/23/1614:40	98E13024	98E13016	IME034S	Field Sample
CA012-SS05-000.5MS	E143-06M	0.971	3.0	05/26/1614:26	05/23/1614:40	98E13025	98E13016	IME034S	Matrix Spike Sample (MS)
CA012-SS05-000.5AS	E143-06A	0.985	3.0	05/26/1614:30	05/23/1614:40	98E13026	98E13016	IME034S	Analytical Spike Sample
CA012-SS05-000.5	E143-06	0.966	3.0	05/26/1614:35	05/23/1614:40	98E13027	98E13016	IME034S	Field Sample
CA012-SS05-000.5DL	E143-06J	4.85	3.0	05/26/1614:48	05/23/1614:40	98E13030	98E13028	IME034S	Diluted Sample
CA012-SS05-000.5DUP	E143-06D	0.976	3.0	05/26/1614:52	05/23/1614:40	98E13031	98E13028	IME034S	Duplicate Sample
CA012-SS06-000.5	E143-07	0.98	11.9	05/26/1614:57	05/23/1614:40	98E13032	98E13028	IME034S	Field Sample
CA012-SS07-000.5	E143-08	0.98	3.7	05/26/1615:01	05/23/1614:40	98E13033	98E13028	IME034S	Field Sample
CA012-SS08-000.5	E143-09	0.976	3.3	05/26/1615:06	05/23/1614:40	98E13034	98E13028	IME034S	Field Sample
CA012-SS07-200.5	E143-10	0.99	3.5	05/26/1615:10	05/23/1614:40	98E13035	98E13028	IME034S	Field Sample
CA012-SS09-000.5	E143-11	0.966	12.8	05/26/1615:15	05/23/1614:40	98E13036	98E13028	IME034S	Field Sample
CA012-SS10-000.5	E143-12	0.976	10.6	05/26/1615:19	05/23/1614:40	98E13037	98E13028	IME034S	Field Sample
CA012-SS11-000.5	E143-13	0.962	6.9	05/26/1615:24	05/23/1614:40	98E13038	98E13028	IME034S	Field Sample

FN - Filename
% Moist - Percent Moisture

RESULT SUMMARIES

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS02-000.5	Date Analyzed:	05/26/16 14:03
Lab Samp ID:	E143-01	Dilution Factor:	0.985
Lab File ID:	98E13020	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	6.5
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.15	0.527	0.0527	0.105

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-C85-SS01A-000.5	Date Analyzed:	05/26/16 14:08
Lab Samp ID:	E143-02	Dilution Factor:	0.976
Lab File ID:	98E13021	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	21.2
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	8.24	0.619	0.0619	0.124

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS03-000.5	Date Analyzed:	05/26/16 14:12
Lab Samp ID:	E143-03	Dilution Factor:	0.976
Lab File ID:	98E13022	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	2.1
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.09	0.498	0.0498	0.0997

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS03-200.5	Date Analyzed:	05/26/16 14:17
Lab Samp ID:	E143-04	Dilution Factor:	0.976
Lab File ID:	98E13023	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	1.9
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.48	0.497	0.0497	0.0995

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS04-000.5	Date Analyzed:	05/26/16 14:21
Lab Samp ID:	E143-05	Dilution Factor:	0.966
Lab File ID:	98E13024	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	2.9
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.21	0.497	0.0497	0.0995

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS05-000.5	Date Analyzed:	05/26/16 14:35
Lab Samp ID:	E143-06	Dilution Factor:	0.966
Lab File ID:	98E13027	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.0
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.99	0.498	0.0498	0.0996

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS06-000.5	Date Analyzed:	05/26/16 14:57
Lab Samp ID:	E143-07	Dilution Factor:	0.98
Lab File ID:	98E13032	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	11.9
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.39	0.556	0.0556	0.111

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS07-000.5	Date Analyzed:	05/26/16 15:01
Lab Samp ID:	E143-08	Dilution Factor:	0.98
Lab File ID:	98E13033	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.7
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.94	0.509	0.0509	0.102

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS08-000.5	Date Analyzed:	05/26/16 15:06
Lab Samp ID:	E143-09	Dilution Factor:	0.976
Lab File ID:	98E13034	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.3
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.16	0.505	0.0505	0.101

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS07-200.5	Date Analyzed:	05/26/16 15:10
Lab Samp ID:	E143-10	Dilution Factor:	0.99
Lab File ID:	98E13035	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.5
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.35	0.513	0.0513	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS09-000.5	Date Analyzed:	05/26/16 15:15
Lab Samp ID:	E143-11	Dilution Factor:	0.966
Lab File ID:	98E13036	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	12.8
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.54	0.554	0.0554	0.111

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS10-000.5	Date Analyzed:	05/26/16 15:19
Lab Samp ID:	E143-12	Dilution Factor:	0.976
Lab File ID:	98E13037	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	10.6
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.93	0.546	0.0546	0.109

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS11-000.5	Date Analyzed:	05/26/16 15:24
Lab Samp ID:	E143-13	Dilution Factor:	0.962
Lab File ID:	98E13038	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	6.9
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.05	0.517	0.0517	0.103

QC SUMMARIES

METHOD BLANK

Method: 6020A

QC Measure: IME034SB

Associated Samples:

CA012-SS02-000.5
CA012-C85-SS01A-000.5
CA012-SS03-000.5
CA012-SS03-200.5
CA012-SS04-000.5
CA012-SS05-000.5
CA012-SS06-000.5
CA012-SS07-000.5
CA012-SS08-000.5
CA012-SS07-200.5
CA012-SS09-000.5
CA012-SS10-000.5
CA012-SS11-000.5

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/23/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	MBLK1S	Date Analyzed:	05/26/16 13:54
Lab Samp ID:	IME034SB	Dilution Factor:	1
Lab File ID:	98E13018	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	NA
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100

LCS/LCD

Method: 6020A

QC Measure: IME034SL

Associated Samples:

CA012-SS02-000.5
CA012-C85-SS01A-000.5
CA012-SS03-000.5
CA012-SS03-200.5
CA012-SS04-000.5
CA012-SS05-000.5
CA012-SS06-000.5
CA012-SS07-000.5
CA012-SS08-000.5
CA012-SS07-200.5
CA012-SS09-000.5
CA012-SS10-000.5
CA012-SS11-000.5

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E143
METHOD: SW6020A

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MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME034SB	IME034SL		
LAB FILE ID:	98E13018	98E13019		
DATIME EXTRCTD:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	NA
DATIME ANALYZD:	05/26/1613:54	05/26/1613:59	DATE RECEIVED:	05/23/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13016		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	20.6	103	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E143
METHOD: SW6020A

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MATRIX:	SOIL		% MOISTURE:	3.0
DILTN FACTR:	0.966	0.971		
SAMPLE ID:	CA012-SS05-000.5			
CONTROL NO.:	E143-06	E143-06M		
LAB FILE ID:	98E13027	98E13025		
DATIME EXTRCTD:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATIME ANALYZD:	05/26/1614:35	05/26/1614:26	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13016		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	2.99	20.0	22.9	100	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E143
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	3.0
DILUTION FACTOR:	0.966	4.85		
SAMPLE ID:	CA012-SS05-000.5	CA012-SS05-000.5DL		
EMAX SAMP ID:	E143-06	E143-06J		
LAB FILE ID:	98E13027	98E13030		
DATE EXTRACTED:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATE ANALYZED:	05/26/1614:35	05/26/1614:48	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13028		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	2.99	3.18	6	10

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E143
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	3.0
DILUTION FACTOR:	0.966	0.976		
SAMPLE ID:	CA012-SS05-000.5	CA012-SS05-000.5DUP		
EMAX SAMP ID:	E143-06	E143-06D		
LAB FILE ID:	98E13027	98E13031		
DATE EXTRACTED:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATE ANALYZED:	05/26/1614:35	05/26/1614:52	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13028		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	2.99	2.99	0	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E143
METHOD: SW6020A

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MATRIX:	SOIL		% MOISTURE:	3.0
DILTN FACTR:	0.966	0.985		
SAMPLE ID:	CA012-SS05-000.5			
CONTROL NO.:	E143-06	E143-06A		
LAB FILE ID:	98E13027	98E13026		
DATIME EXTRCTD:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATIME ANALYZD:	05/26/1614:35	05/26/1614:30	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13016		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	2.99	20.3	23.5	101	75-125

RAW DATA

ARSENIC

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS02-000.5	Date Analyzed:	05/26/16 14:03
Lab Samp ID:	E143-01	Dilution Factor:	0.985
Lab File ID:	98E13020	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	6.5
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.15	0.527	0.0527	0.105

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-C85-SS01A-000.5	Date Analyzed:	05/26/16 14:08
Lab Samp ID:	E143-02	Dilution Factor:	0.976
Lab File ID:	98E13021	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	21.2
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	8.24	0.619	0.0619	0.124

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS03-000.5	Date Analyzed:	05/26/16 14:12
Lab Samp ID:	E143-03	Dilution Factor:	0.976
Lab File ID:	98E13022	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	2.1
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.09	0.498	0.0498	0.0997

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS03-200.5	Date Analyzed:	05/26/16 14:17
Lab Samp ID:	E143-04	Dilution Factor:	0.976
Lab File ID:	98E13023	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	1.9
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.48	0.497	0.0497	0.0995

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS04-000.5	Date Analyzed:	05/26/16 14:21
Lab Samp ID:	E143-05	Dilution Factor:	0.966
Lab File ID:	98E13024	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	2.9
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.21	0.497	0.0497	0.0995

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS05-000.5	Date Analyzed:	05/26/16 14:35
Lab Samp ID:	E143-06	Dilution Factor:	0.966
Lab File ID:	98E13027	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.0
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.99	0.498	0.0498	0.0996

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS06-000.5	Date Analyzed:	05/26/16 14:57
Lab Samp ID:	E143-07	Dilution Factor:	0.98
Lab File ID:	98E13032	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	11.9
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.39	0.556	0.0556	0.111

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS07-000.5	Date Analyzed:	05/26/16 15:01
Lab Samp ID:	E143-08	Dilution Factor:	0.98
Lab File ID:	98E13033	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.7
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.94	0.509	0.0509	0.102

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS08-000.5	Date Analyzed:	05/26/16 15:06
Lab Samp ID:	E143-09	Dilution Factor:	0.976
Lab File ID:	98E13034	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.3
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.16	0.505	0.0505	0.101

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS07-200.5	Date Analyzed:	05/26/16 15:10
Lab Samp ID:	E143-10	Dilution Factor:	0.99
Lab File ID:	98E13035	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	3.5
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.35	0.513	0.0513	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS09-000.5	Date Analyzed:	05/26/16 15:15
Lab Samp ID:	E143-11	Dilution Factor:	0.966
Lab File ID:	98E13036	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	12.8
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.54	0.554	0.0554	0.111

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS10-000.5	Date Analyzed:	05/26/16 15:19
Lab Samp ID:	E143-12	Dilution Factor:	0.976
Lab File ID:	98E13037	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	10.6
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.93	0.546	0.0546	0.109

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/14/16
Project	: CANNON AFB PBR	Date Received:	05/17/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	CA012-SS11-000.5	Date Analyzed:	05/26/16 15:24
Lab Samp ID:	E143-13	Dilution Factor:	0.962
Lab File ID:	98E13038	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	6.9
Calib. Ref.:	98E13028	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.05	0.517	0.0517	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/23/16
SDG NO.	: 16E143	Date Extracted:	05/23/16 14:40
Sample ID:	MBLK1S	Date Analyzed:	05/26/16 13:54
Lab Samp ID:	IME034SB	Dilution Factor:	1
Lab File ID:	98E13018	Matrix :	SOIL
Ext Btch ID:	IME034S	% Moisture :	NA
Calib. Ref.:	98E13016	Instrument ID :	T-I98

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E143
METHOD: SW6020A

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MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME034SB	IME034SL		
LAB FILE ID:	98E13018	98E13019		
DATIME EXTRCTD:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	NA
DATIME ANALYZD:	05/26/1613:54	05/26/1613:59	DATE RECEIVED:	05/23/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13016		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	20.6	103	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E143
METHOD: SW6020A

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MATRIX:	SOIL		% MOISTURE:	3.0
DILTN FACTR:	0.966	0.971		
SAMPLE ID:	CA012-SS05-000.5			
CONTROL NO.:	E143-06	E143-06M		
LAB FILE ID:	98E13027	98E13025		
DATIME EXTRCTD:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATIME ANALYZD:	05/26/1614:35	05/26/1614:26	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13016		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	2.99	20.0	22.9	100	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E143
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	3.0
DILUTION FACTOR:	0.966	0.976		
SAMPLE ID:	CA012-SS05-000.5	CA012-SS05-000.5DUP		
EMAX SAMP ID:	E143-06	E143-06D		
LAB FILE ID:	98E13027	98E13031		
DATE EXTRACTED:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATE ANALYZED:	05/26/1614:35	05/26/1614:52	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13028		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	2.99	2.99	0	20

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E143
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	3.0
DILUTION FACTOR:	0.966	4.85		
SAMPLE ID:	CA012-SS05-000.5	CA012-SS05-000.5DL		
EMAX SAMP ID:	E143-06	E143-06J		
LAB FILE ID:	98E13027	98E13030		
DATE EXTRACTED:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATE ANALYZED:	05/26/1614:35	05/26/1614:48	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13028		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	2.99	3.18	6	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E143
METHOD: SW6020A

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MATRIX:	SOIL		% MOISTURE:	3.0
DILTN FACTR:	0.966	0.985		
SAMPLE ID:	CA012-SS05-000.5			
CONTROL NO.:	E143-06	E143-06A		
LAB FILE ID:	98E13027	98E13026		
DATIME EXTRCTD:	05/23/1614:40	05/23/1614:40	DATE COLLECTED:	05/14/16
DATIME ANALYZD:	05/26/1614:35	05/26/1614:30	DATE RECEIVED:	05/17/16
PREP. BATCH:	IME034S	IME034S		
CALIB. REF:	98E13016	98E13016		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	2.99	20.3	23.5	101	75-125

ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 5/26/16 12:47

End Date: 5/27/16 00:17

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

- EM4-05A lot J Mn failed
- CCV11, CCV12 Pb failed

Book #:	A98-040
Instrument No.:	98
Analytical Batch:	98E13
Analytical Sequence:	98E13
Method File:	EMX6020H
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☑ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SML6809.81.02	MRL1 (1)	SML6809.83.01
S1	81.03	MRL2 (05)	83.02
S2	81.04	MRL3 (10)	83.03
S3	81.05	MRL4	NA
S4	82.01	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SML6809.68.07
S7		Post-Spike 1	SML6A.07.83.07
ICV	SML6809.71.03	Post-Spike 2	83.06
CCV	82.02	Post-Spike 3	NA
ICSA	82.03	Post-Spike 4	
ICSAB	82.06		
6020 TUNE SOLN.	SML6809.80.07		
200.8 TUNE SOLN.	80.08		

Analyzed By: CW

Date: 5/26/16

SEQUENCE FILE : I98E13

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
98E13003	BLNK	12:47	05/26/16	1.00
98E13004	S0	12:52	05/26/16	1.00
98E13005	S1 0.5	12:57	05/26/16	1.00
98E13006	S2 50	13:01	05/26/16	1.00
98E13007	S3 250	13:06	05/26/16	1.00
98E13008	S4 500	13:10	05/26/16	1.00
98E13009	ICV	13:14	05/26/16	1.00
98E13010	ICB	13:18	05/26/16	1.00
98E13011	MRLE2601	13:22	05/26/16	1.00
98E13012	ICSA	13:27	05/26/16	1.00
98E13013	ICSAB	13:32	05/26/16	1.00
98E13014	MRLE2602	13:36	05/26/16	1.00
98E13015	MRLE2603	13:41	05/26/16	1.00
98E13016	CCV1	13:45	05/26/16	1.00
98E13017	CCB1	13:50	05/26/16	1.00
98E13018	IME034SB	13:54	05/26/16	1.00
98E13019	IME034SL	13:59	05/26/16	1.00
98E13020	E143-01	14:03	05/26/16	1.00
98E13021	E143-02	14:08	05/26/16	1.00
98E13022	E143-03	14:12	05/26/16	1.00
98E13023	E143-04	14:17	05/26/16	1.00
98E13024	E143-05	14:21	05/26/16	1.00
98E13025	E143-06M	14:26	05/26/16	1.00
98E13026	E143-06A	14:30	05/26/16	1.00
98E13027	E143-06	14:35	05/26/16	1.00
98E13028	CCV2	14:39	05/26/16	1.00
98E13029	CCB2	14:43	05/26/16	1.00
98E13030	E143-06J	14:48	05/26/16	5.00
98E13031	E143-06D	14:52	05/26/16	1.00
98E13032	E143-07	14:57	05/26/16	1.00
98E13033	E143-08	15:01	05/26/16	1.00
98E13034	E143-09	15:06	05/26/16	1.00
98E13035	E143-10	15:10	05/26/16	1.00
98E13036	E143-11	15:15	05/26/16	1.00
98E13037	E143-12	15:19	05/26/16	1.00
98E13038	E143-13	15:24	05/26/16	1.00
98E13039	BLANK	15:34	05/26/16	1.00
98E13040	CCV3	15:39	05/26/16	1.00
98E13041	CCB3	15:43	05/26/16	1.00
98E13042	MRLE2604	15:47	05/26/16	1.00
98E13043	IME033SB	15:52	05/26/16	1.00
98E13044	IME033SL	15:57	05/26/16	1.00
98E13045	IME033SC	16:01	05/26/16	1.00
98E13046	A258-08	16:05	05/26/16	1.00
98E13047	E145-01	16:10	05/26/16	1.00
98E13048	E145-02	16:14	05/26/16	1.00
98E13049	E145-03	16:19	05/26/16	1.00
98E13050	E145-04	16:24	05/26/16	1.00
98E13051	BLANK	16:28	05/26/16	1.00
98E13052	CCV4	16:33	05/26/16	1.00
98E13053	CCB4	16:38	05/26/16	1.00

98E13054	E145-05	16:43	05/26/16	1.00
98E13055	E145-06M	16:47	05/26/16	1.00
98E13056	E145-06S	16:52	05/26/16	1.00
98E13057	E145-06A	16:56	05/26/16	1.00
98E13058	E145-06	17:01	05/26/16	1.00
98E13059	E145-06J	17:05	05/26/16	5.00
98E13060	E145-07	17:10	05/26/16	1.00
98E13061	BLANK	17:26	05/26/16	1.00
98E13062	CCV5	17:31	05/26/16	1.00
98E13063	CCB5	17:43	05/26/16	1.00
98E13064	E146-21	17:47	05/26/16	1.00
98E13065	E146-22M	17:52	05/26/16	1.00
98E13066	E146-22S	17:57	05/26/16	1.00
98E13067	E146-22A	18:01	05/26/16	1.00
98E13068	E146-22	18:05	05/26/16	1.00
98E13069	E146-22J	18:10	05/26/16	5.00
98E13070	E146-23	18:14	05/26/16	1.00
98E13071	BLANK	18:19	05/26/16	1.00
98E13072	CCV6	18:23	05/26/16	1.00
98E13073	CCB6	18:38	05/26/16	1.00
98E13074	IME030SB	18:43	05/26/16	1.00
98E13075	IME030SL	18:47	05/26/16	1.00
98E13076	IME030SC	18:52	05/26/16	1.00
98E13077	E146-01	18:56	05/26/16	1.00
98E13078	E146-02	19:01	05/26/16	1.00
98E13079	E146-03	19:05	05/26/16	1.00
98E13080	E146-04	19:10	05/26/16	1.00
98E13081	E146-05M	19:14	05/26/16	1.00
98E13082	E146-05S	19:19	05/26/16	1.00
98E13083	BLANK	19:48	05/26/16	1.00
98E13084	CCV7	19:52	05/26/16	1.00
98E13085	CCB7	20:05	05/26/16	1.00
98E13086	E146-05A	20:10	05/26/16	1.00
98E13087	E146-05	20:14	05/26/16	1.00
98E13088	E146-05J	20:19	05/26/16	5.00
98E13089	E146-06	20:23	05/26/16	1.00
98E13090	E146-07	20:28	05/26/16	1.00
98E13091	E146-08	20:33	05/26/16	1.00
98E13092	E146-09	20:37	05/26/16	1.00
98E13093	E146-10	20:42	05/26/16	1.00
98E13094	E146-11	20:46	05/26/16	1.00
98E13095	BLANK	20:51	05/26/16	1.00
98E13096	CCV8	20:55	05/26/16	1.00
98E13097	CCB8	20:59	05/26/16	1.00
98E13098	E146-12	21:04	05/26/16	1.00
98E13099	E146-13	21:09	05/26/16	1.00
98E13100	E146-14	21:13	05/26/16	1.00
98E13101	E146-15	21:18	05/26/16	1.00
98E13102	E146-16	21:22	05/26/16	1.00
98E13103	E146-17	21:27	05/26/16	1.00
98E13104	E146-18	21:31	05/26/16	1.00
98E13105	E146-19	21:36	05/26/16	1.00
98E13106	E146-20	21:40	05/26/16	1.00
98E13107	BLANK	21:45	05/26/16	1.00

98E13108	CCV9	21:50	05/26/16	1.00
98E13109	CCB9	21:54	05/26/16	1.00
98E13110	IME035SB	21:58	05/26/16	1.00
98E13111	IME035SL	22:03	05/26/16	1.00
98E13112	IME035SC	22:07	05/26/16	1.00
98E13113	B009-15	22:12	05/26/16	1.00
98E13114	E148-01	22:16	05/26/16	1.00
98E13115	E148-02	22:21	05/26/16	1.00
98E13116	E148-03	22:25	05/26/16	1.00
98E13117	E148-04	22:30	05/26/16	1.00
98E13118	E148-05	22:34	05/26/16	1.00
98E13119	BLANK	22:39	05/26/16	1.00
98E13120	CCV10	22:43	05/26/16	1.00
98E13121	CCB10	22:48	05/26/16	1.00
98E13122	E148-06	22:52	05/26/16	1.00
98E13123	E148-07	22:57	05/26/16	1.00
98E13124	E148-08	23:01	05/26/16	1.00
98E13125	E148-09	23:06	05/26/16	1.00
98E13126	E152-01	23:10	05/26/16	1.00
98E13127	E152-02	23:15	05/26/16	1.00
98E13128	E152-03	23:19	05/26/16	1.00
98E13129	E152-04	23:24	05/26/16	1.00
98E13130	E152-05	23:28	05/26/16	1.00
98E13131	BLANK	23:33	05/26/16	1.00
98E13132	CCV11	23:37	05/26/16	1.00
98E13133	CCB11	23:41	05/26/16	1.00
98E13134	E152-06M	23:46	05/26/16	1.00
98E13135	E152-06S	23:51	05/26/16	1.00
98E13136	E152-06A	23:55	05/26/16	1.00
98E13137	E152-06	23:59	05/26/16	1.00
98E13138	E152-06J	00:04	05/27/16	5.00
98E13139	BLANK	00:08	05/27/16	1.00
98E13140	CCV12	00:13	05/27/16	1.00
98E13141	CCB12	00:17	05/27/16	1.00

SDG : 16E143 UNIT : % ICPMS CHECK : I98E13 DATE : 05/26/16 INST : EMAXTI98

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	104	107	103	98	98	101	103	96	98	101	98	101	101	99	100	95	96	98	98	99	101	98	71*	98	101	97	100	98	102	103	99	93	99
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE2601	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	97	96	99	----	101	99	99	107	----	----	----	98	----	----	----	----	----	----	----	----	100	----	----	----	----	----	----	----	----	----
ICSAB	102	106	98	97	96	99	101	101	99	99	110	100	103	105	99	101	101	101	103	104	107	101	48*	101	93	100	98	100	101	113	100	95	100
MRLE2602	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE2603	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	102	107	103	95	98	99	98	98	100	98	100	101	101	103	99	100	101	102	100	100	102	100	85*	101	97	99	101	98	100	118*	102	97	102
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME034SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME034SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	105	111*	106	95	95	97	98	97	101	99	99	101	99	103	99	100	99	100	97	100	103	101	83*	103	97	99	102	97	100	116*	99	95	101
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	100	101	97	102	107	107	104	107	102	100	100	100	99	99	98	95	97	97	98	101	101	99	80*	102	98	99	101	97	100	113*	97	93	99
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE2604	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME033SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME033SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME033SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A258-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	99	99	96	103	106	107	106	107	103	101	99	98	97	98	97	94	95	95	98	101	101	99	101	102	97	99	101	96	100	114*	98	93	98
CCB4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

E145-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	101	100	97	101	106	106	105	106	103	99	99	98	97	99	98	95	94	94	99	101	100	100	86*	103	97	99	102	97	102	115*	101	96	100
CCB5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	100	93	90	100	106	107	107	110	104	101	99	98	96	97	98	93	93	94	98	102	98	101	92	101	94	97	100	96	101	114*	100	96	99
CCB6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME030SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME030SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME030SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	102	102	97	99	100	103	105	105	104	101	99	98	96	99	99	95	93	94	98	100	99	103	84*	101	95	97	100	97	103	114*	102	96	101
CCB7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	106	105	104	99	105	107	108	108	105	102	99	97	95	100	99	96	92	93	99	101	99	102	96	100	95	96	100	96	102	113*	101	97	100
CCB8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV9	101	96	93	96	106	108	104	111*	105	101	99	96	94	98	99	95	91	92	98	102	98	104	98	102	94	96	101	98	105	109	98	92	95
CCB9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME035SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME035SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME035SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B009-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV10	98	93	90	95	106	108	104	112*	106	100	98	96	94	96	100	94	91	92	98	101	99	105	96	99	92	95	100	96	103	109	98	91	94
CCB10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV11	97	88*	85*	94	106	107	102	111*	107	100	98	96	93	96	101	94	92	92	96	102	99	106	100	100	92	95	100	96	104	110	99	93	94
CCB11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV12	96	88*	85*	94	106	108	103	111*	106	100	98	96	93	97	101	94	91	93	96	102	99	107	94	97	90	95	100	96	104	109	98	92	95
CCB12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

SDG : 16E143 UNIT : UG/L SUMMARY of CALIBRATION BLANKS : I98E13 (SOIL) DATE : 05/26/16 INST : EMAXTI98

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	.272	.006	.448	-3.32	.643	1.42	.921	-1.53	-3.03	1.41	.018	-.025	.004	.046	4.10	.006	-.018	.022	-.005	.036	.064	.006	.000	.198	.002	.008	.182	.144	.008	.042	.040	.016	.044
MRLE2601	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	.429	.017	.612	----	----	----	3.22	----	----	----	----	.036	.685	.356	----	.135	.063	.392	1.45	.076	.089	.372	1.08	----	.018	.169	.112	.105	.103	.094	.041	.133	.041
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE2602	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE2603	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	.713	.009	.443	-.463	3.82	3.73	.597	-.904	2.98	3.32	.073	.002	.021	.135	5.58	.026	.011	.036	.002	.041	.051	.024	-.003	.217	.004	.018	.116	.307	.038	.025	.032	.028	.046
IME034SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME034SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.800	.011	.548	-4.45	3.06	5.59	3.42	-1.30	5.79	8.64	.108	-.000	.013	.157	6.60	.021	-.025	.019	.022	.031	.048	.033	-.002	.157	.004	.021	.109	.334	.074	.022	.031	.026	.042
E143-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-06D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E143-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CC83	.371	-.001	.208	-3.97	2.49	5.65	3.54	2.37	10.9	13.6	.073	.018	.005	.140	6.53	.012	-.053	.009	.048	.032	.038	.031	-.004	.141	.002	.020	.107	.334	.081	.017	.021	.027	.036
MRLE2604	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME033SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME033SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME033SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A258-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB4	.472	.002	.779	-6.03	7.48	5.47	2.62	2.57	11.7	22.1	.098	.026	.002	.116	7.63	.010	-.081	-.001	.020	.031	.032	.610	-.004	.094	.002	.016	.077	.386	.066	.010	.017	.016	.023

E145-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E145-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB5	.513	-.000	.601	-10.9	6.75	4.24	4.22	2.67	10.1	58.2	.123	.036	-.004	.119	8.89	.009	-.089	.002	.014	.018	.011	.393	.041	.033	.002	.014	.036	.179	.089	.002	.015	.014	.014
E146-21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-22J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB6	.219	-.003	.207	-14.2	1.21	.289	2.45	4.80	7.55	1.44	.008	-.003	-.012	.004	1.58	-.002	-.097	.022	-.112	.005	.008	.018	-.010	.021	-.000	-.003	.017	.106	.009	-.000	.002	.002	.003
IME030SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME030SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME030SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB7	.531	.006	.392	-15.4	5.73	3.58	1.25	3.87	16.1	6.64	.079	.055	-.005	.126	2.73	.010	-.107	.016	-.055	.018	.008	.147	.011	.034	.004	.010	.037	.152	.059	.000	.017	.013	.016
E146-05A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-05J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB8	.566	.008	.553	-15.6	8.01	4.62	1.12	3.31	17.5	17.4	.132	.034	.002	.165	7.07	.011	-.076	.064	.028	.042	.039	.161	.000	.114	.002	.010	.100	.315	.068	.012	.020	.016	.033
E146-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E146-20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB9	.252	.000	.545	-15.9	12.5	11.2	2.57	3.52	21.2	27.7	.173	.038	-.000	.256	10.3	.012	-.090	.046	.000	.039	.045	.205	.003	.123	.002	.012	.103	.297	.122	.014	.024	.020	.033
IME035SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME035SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME035SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B009-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB10	.286	.004	.557	-16.4	9.52	5.88	2.63	2.44	21.4	53.1	.156	.034	.000	.190	11.9	.012	-.099	.033	-.015	.031	.047	.162	.000	.113	.002	.013	.101	.297	.090	.014	.021	.015	.033
E148-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E148-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB11	.268	-.005	.590	-16.8	9.47	4.93	2.28	3.82	25.1	63.1	.142	.050	.000	.160	16.0	.010	-.091	.039	.016	.051	.047	.181	.000	.113	.000	.008	.100	.292	.077	.015	.018	.014	.029
E152-06M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E152-06J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB12	.201	.007	.685	-17.5	5.54	2.16	2.42	4.14	23.8	6.20	.069	.048	-.005	.076	5.86	.010	-.099	.023	-.047	.028	.043	.063	-.000	.139	.002	.008	.119	.385	.038	.017	.021	.009	.032

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	Final WT or Vol	Sample WT or Vol	Dil Multiplier	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE									
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	98E13001	6020tunchk		1.000							
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	98E13002	2008tunchk		1.000							
4		Keyword		TUNEND	End of TUNE									
5		Keyword		CALBEG	Start of CALIB									
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	98E13003	BLNK		Level 1							
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1202	98E13004	S0		Level 1							
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	98E13005	S1 0.5		Level 2							
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	98E13006	S2 50		Level 3							
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	98E13007	S3 250		Level 4							
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	98E13008	S4 500		Level 5							
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	98E13009	ICV		1.000							
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1202	98E13010	ICB		1.000							
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	98E13011	MRLE2601	0.5/50/4 ppb	1.000							
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	98E13012	ICSA		1.000							
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	98E13013	ICSAB		1.000							
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	98E13014	MRLE2602	500 ppb CAT	1.000							
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	98E13015	MRLE2603	1/100/10 ppb	1.000							
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13016	CCV1		1.000							
20	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13017	CCB1		1.000							
21		Keyword		CALEND	End of CALIB									
22		Keyword		SMPLBEG	Start of SMPL									
23	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2101	98E13018	IME034SB		1.000							
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2102	98E13019	IME034SL		1.000							
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2103	98E13020	E143-01		1.000							
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2104	98E13021	E143-02		1.000							
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2105	98E13022	E143-03		1.000							
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2106	98E13023	E143-04		1.000							
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2107	98E13024	E143-05		1.000							
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2108	98E13025	E143-06M		1.000							
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2109	98E13026	E143-06A		1.000							
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2110	98E13027	E143-06		1.000							
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13028	CCV2		1.000							
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13029	CCB2		1.000							
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2111	98E13030	E143-06J		5.000							
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2112	98E13031	E143-06D		1.000							
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2201	98E13032	E143-07		1.000							
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2202	98E13033	E143-08		1.000							
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2203	98E13034	E143-09		1.000							
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2204	98E13035	E143-10		1.000							
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2205	98E13036	E143-11		1.000							
42	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2206	98E13037	E143-12		1.000							
43	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2207	98E13038	E143-13		1.000							
44	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13039	BLANK		1.000							
45	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13040	CCV3		1.000							
46	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13041	CCB3		1.000							
47	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	98E13042	MRLE2604	1/100/10 ppb	1.000							
48	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2208	98E13043	IME033SB		1.000							
49	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2209	98E13044	IME033SL		1.000							
50	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2210	98E13045	IME033SL		1.000							
51	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2211	98E13046	A258-08		1.000							

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	Final WT or Vol	Sample WT or Vol	Dil Multiplier	ISTD Conc	Action on Failure	Skip	Result
52	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2212	98E13047	E145-01		1.000							
53	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2301	98E13048	E145-02		1.000							
54	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2302	98E13049	E145-03		1.000							
55	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2303	98E13050	E145-04		1.000							
56	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13051	BLANK		1.000							
57	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13052	CCV4		1.000							
58	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13053	CCB4		1.000							
59	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2304	98E13054	E145-05		1.000							
60	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2305	98E13055	E145-06M		1.000							
61	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2306	98E13056	E145-06S		1.000							
62	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2307	98E13057	E145-06A		1.000							
63	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2308	98E13058	E145-06		1.000							
64	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2309	98E13059	E145-06J		5.000							
65	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2310	98E13060	E145-07		1.000							
66	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13061	BLANK		1.000							
67	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13062	CCV5		1.000							
68	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13063	CCB5		1.000							
69	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2311	98E13064	E146-21		1.000							
70	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2312	98E13065	E146-22M	Fe > LOR	1.000							
71	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2401	98E13066	E146-22S	Ag, Fe > LOR	1.000							
72	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2402	98E13067	E146-22A	↓	1.000							
73	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2403	98E13068	E146-22	Fe > LOR	1.000							
74	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2404	98E13069	E146-22J		5.000							
75	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2405	98E13070	E146-23	Fe > LOR	1.000							
76	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13071	BLANK		1.000							
77	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13072	CCV6		1.000							
78	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13073	CCB6		1.000							
79	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2406	98E13074	IME030SB		1.000							
80	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2407	98E13075	IME030SL		1.000							
81	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2408	98E13076	IME030SC		1.000							
82	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2409	98E13077	E146-01		1.000							
83	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2410	98E13078	E146-02		1.000							
84	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2411	98E13079	E146-03		1.000							
85	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2412	98E13080	E146-04		1.000							
86	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2501	98E13081	E146-05M	Zn > LOR	1.000							
87	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2502	98E13082	E146-05S	↓	1.000							
88	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13083	BLANK		1.000							
89	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13084	CCV7		1.000							
90	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13085	CCB7		1.000							
91	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2503	98E13086	E146-05A	Zn > LOR in bilo	1.000							
92	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2504	98E13087	E146-05	↓ ↓	1.000							
93	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2505	98E13088	E146-05J		5.000							
94	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2506	98E13089	E146-06	Cu, Zn > LOR	1.000							
95	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2507	98E13090	E146-07		1.000							
96	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2508	98E13091	E146-08	Cu, Zn > LOR	1.000							
97	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2509	98E13092	E146-09		1.000							
98	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2510	98E13093	E146-10		1.000							
99	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2511	98E13094	E146-11		1.000							
100	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13095	BLANK		1.000							
101	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13096	CCV8		1.000							
102	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13097	CCB8		1.000							

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	Final WT or Vol	Sample WT or Vol	Dil Multiplier	ISTD Conc	Action on Failure	Skip	Result
103	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2512	98E13098	E146-12		1.000							
104	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3101	98E13099	E146-13		1.000							
105	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3102	98E13100	E146-14	Fe > UPR	1.000							
106	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3103	98E13101	E146-15	Fe, Zn > UPR	1.000							
107	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3104	98E13102	E146-16		1.000							
108	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3105	98E13103	E146-17		1.000							
109	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3106	98E13104	E146-18		1.000							
110	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3107	98E13105	E146-19		1.000							
111	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3108	98E13106	E146-20		1.000							
112	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13107	BLANK		1.000							
113	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13108	CCV9		1.000							
114	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13109	CCB9		1.000							
115	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	3109	98E13110	IME035SB		1.000							
116	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	3110	98E13111	IME035SL		1.000							
117	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	3111	98E13112	IME035SC		1.000							
118	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3112	98E13113	B009-15		1.000							
119	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3201	98E13114	E148-01		1.000							
120	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3202	98E13115	E148-02		1.000							
121	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3203	98E13116	E148-03		1.000							
122	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3204	98E13117	E148-04	Zn > UPR	1.000							
123	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3205	98E13118	E148-05		1.000							
124	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13119	BLANK		1.000							
125	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13120	CCV10		1.000							
126	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13121	CCB10		1.000							
127	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3206	98E13122	E148-06		1.000							
128	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3207	98E13123	E148-07		1.000							
129	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3208	98E13124	E148-08		1.000							
130	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3209	98E13125	E148-09		1.000							
131	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3210	98E13126	E152-01		1.000							
132	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3211	98E13127	E152-02	Zn, Fe > UPR (10x)	1.000							
133	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3212	98E13128	E152-03		1.000							
134	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3301	98E13129	E152-04		1.000							
135	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3302	98E13130	E152-05		1.000							
136	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13131	BLANK		1.000							
137	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13132	CCV11	Be failed	1.000							
138	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13133	CCB11		1.000							
139	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3303	98E13134	E152-06M		1.000							
140	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3304	98E13135	E152-06S		1.000							
141	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3305	98E13136	E152-06A		1.000							
142	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3306	98E13137	E152-06		1.000							
143	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3307	98E13138	E152-06J		5.000							
144	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	98E13139	BLANK		1.000							
145	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	98E13140	CCV12	Be failed	1.000							
146	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	98E13141	CCB12		1.000							
147		Keyword		StandBy										
148		Keyword		SMPLEND	End of SMPL									
149		Keyword		End	End of Sequence									
150		Keyword		CCVBEG	Start of CCV									
151		Keyword		CCVEND	End of CCV									
152		Keyword		BLKBEG	Start of BLANK									
153		Keyword		BLKEND	End of BLANK									

Last Calib: May 26, 2016 01:12 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	d:\data\i982016\e\i98e13.b\98e13004.d\98e13004.d#	S0	May 26 2016 12:52 pm
2	d:\data\i982016\e\i98e13.b\98e13005.d\98e13005.d#	S1 0.5	May 26 2016 12:57 pm
3	d:\data\i982016\e\i98e13.b\98e13006.d\98e13006.d#	S2 50	May 26 2016 01:01 pm
4	d:\data\i982016\e\i98e13.b\98e13007.d\98e13007.d#	S3 250	May 26 2016 01:06 pm
5	d:\data\i982016\e\i98e13.b\98e13008.d\98e13008.d#	S4 500	May 26 2016 01:10 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - d:\DATA\I982016\E\I98E13.B\EMX6020H.C

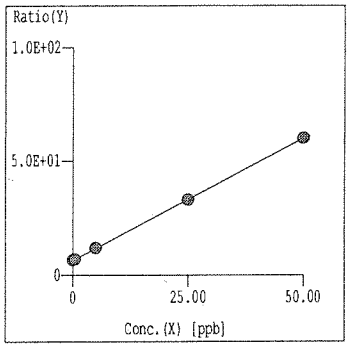
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

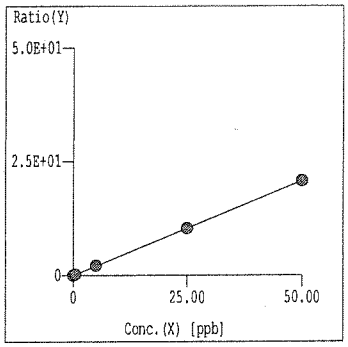
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 7 Li 6 ppb



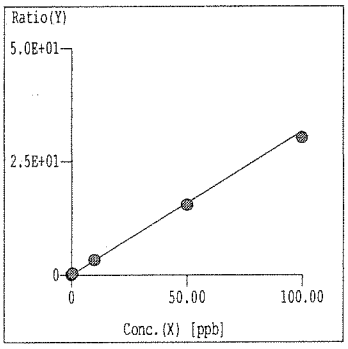
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.069E+000*X +6.452E+000
X = 9.354E-001*Y -6.035E+000
DL = 3.312E-01 ppb
BEC = 6.035 ppb

Step Mass Element ISTD Unit
(3) 9 Be 6 ppb



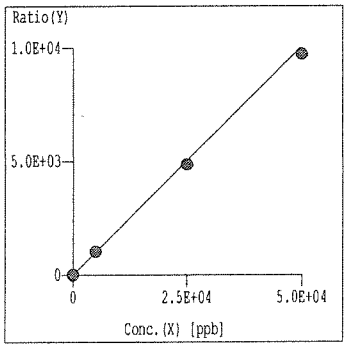
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.137E-001*X +5.648E-003
X = 2.417E+000*Y -1.365E-002
DL = 1.408E-02 ppb
BEC = 1.365E-02 ppb

Step Mass Element ISTD Unit
(3) 11 B 6 ppb



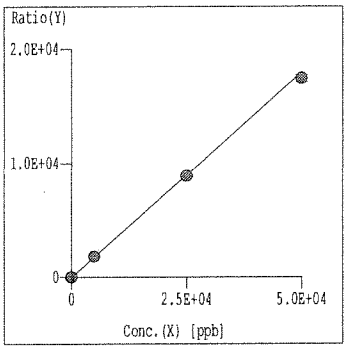
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.153E-001*X +1.084E-001
X = 3.171E+000*Y -3.437E-001
DL = 1.958E-02 ppb
BEC = 3.437E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



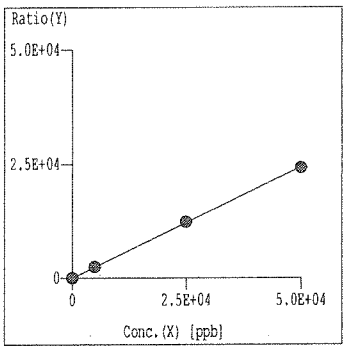
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.012E-001*X +6.520E+000
X = 4.969E+000*Y -3.240E+001
DL = 1.403 ppb
BEC = 32.40 ppb

Step Mass Element ISTD Unit
(3) 24 Mg 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 3.599E-001*X +3.452E-001
X = 2.778E+000*Y -9.592E-001
DL = 2.869E-02 ppb
BEC = 9.592E-01 ppb

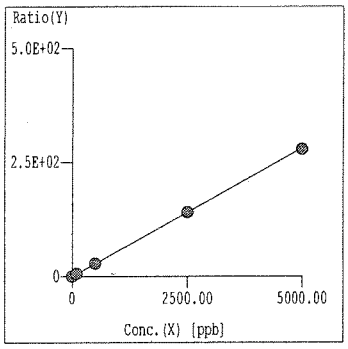
Step Mass Element ISTD Unit
(3) 27 Al 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 4.878E-001*X +8.507E-002
X = 2.050E+000*Y -1.744E-001
DL = 4.167E-03 ppb
BEC = 1.744E-01 ppb

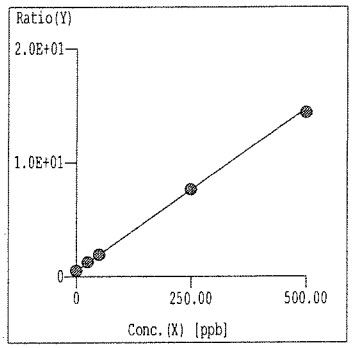
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(1) 28 Si	45	ppb



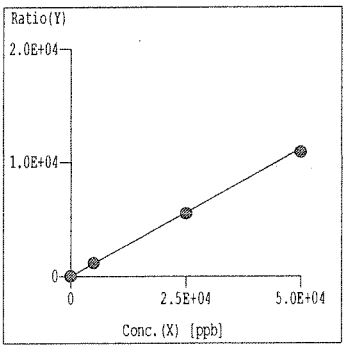
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.618E-002*X +9.066E-002
X = 1.780E+001*Y -1.614E+000
DL = 7.128E-02 ppb
BEC = 1.614 ppb

Step Mass Element	ISTD	Unit
(3) 31 P	45	ppb



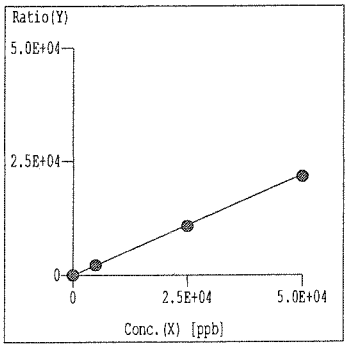
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.840E-002*X +5.153E-001
X = 3.521E+001*Y -1.814E+001
DL = 7.360E-01 ppb
BEC = 18.14 ppb

Step Mass Element	ISTD	Unit
(2) 39 K	45	ppb



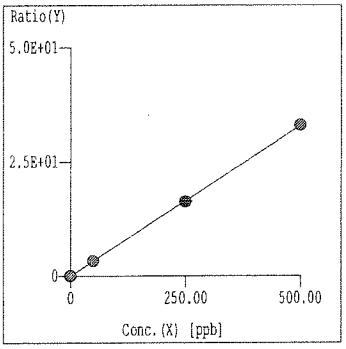
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.236E-001*X +1.269E+001
X = 4.473E+000*Y -5.676E+001
DL = 1.349 ppb
BEC = 56.76 ppb

Step Mass Element	ISTD	Unit
(1) 40 Ca	45	ppb



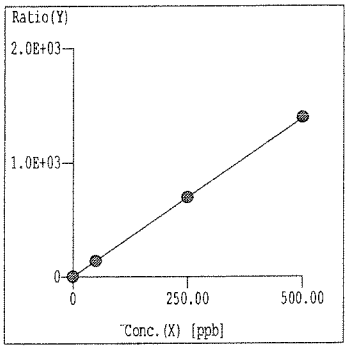
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.407E-001*X +1.300E+000
X = 2.269E+000*Y -2.950E+000
DL = 5.446E-02 ppb
BEC = 2.950 ppb

Step Mass Element	ISTD	Unit
(3) 47 Ti	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.594E-002*X +2.733E-003
X = 1.517E+001*Y -4.145E-002
DL = 1.006E-02 ppb
BEC = 4.145E-02 ppb

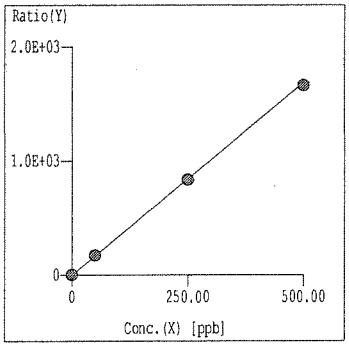
Step Mass Element	ISTD	Unit
(2) 51 V	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.779E+000*X +5.819E-001
X = 3.598E-001*Y -2.094E-001
DL = 2.694E-02 ppb
BEC = 2.094E-01 ppb

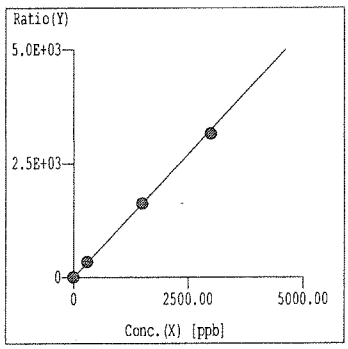
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(2) 52 Cr	45	ppb



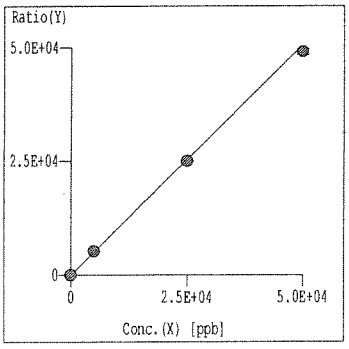
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.372E+000*X +1.301E-001
X = 2.965E-001*Y -3.857E-002
DL = 2.769E-03 ppb
BEC = 3.857E-02 ppb

Step Mass Element	ISTD	Unit
(3) 55 Mn	45	ppb



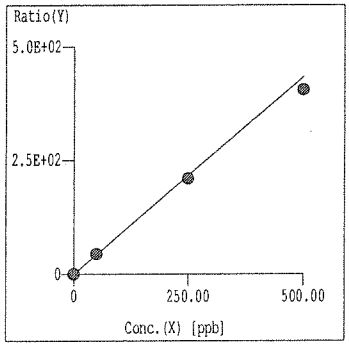
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.083E+000*X +9.919E-002
X = 9.233E-001*Y -9.158E-002
DL = 6.608E-03 ppb
BEC = 9.158E-02 ppb

Step Mass Element	ISTD	Unit
(1) 56 Fe	45	ppb



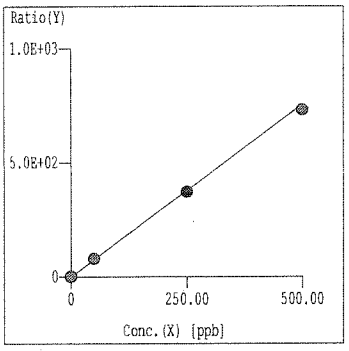
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.013E+000*X +2.304E-001
X = 9.873E-001*Y -2.275E-001
DL = 2.847E-02 ppb
BEC = 2.275E-01 ppb

Step Mass Element	ISTD	Unit
(3) 59 Co	45	ppb



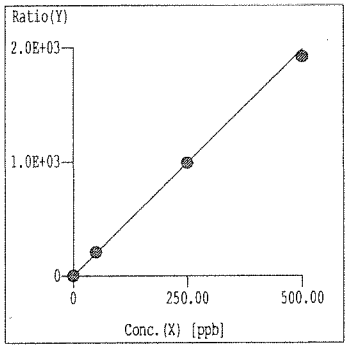
Curve Fit: Y=aX+b
r = 0.9998
Y = 8.658E-001*X +8.928E-003
X = 1.155E+000*Y -1.031E-002
DL = 2.071E-03 ppb
BEC = 1.031E-02 ppb

Step Mass Element	ISTD	Unit
(2) 60 Ni	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.511E+000*X +2.916E-001
X = 6.619E-001*Y -1.930E-001
DL = 2.990E-02 ppb
BEC = 1.930E-01 ppb

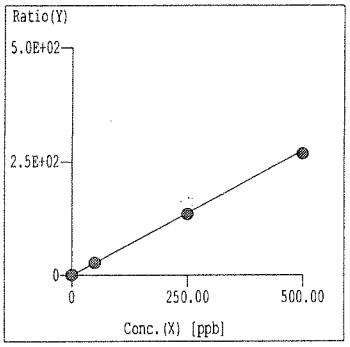
Step Mass Element	ISTD	Unit
(2) 63 Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 3.970E+000*X +3.586E-001
X = 2.519E-001*Y -9.031E-002
DL = 5.209E-03 ppb
BEC = 9.031E-02 ppb

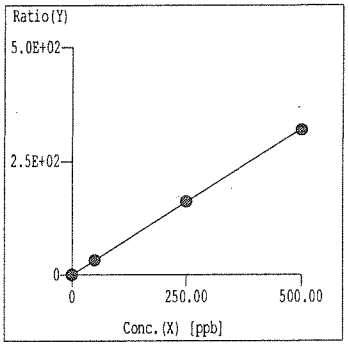
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 66 Zn	72	ppb



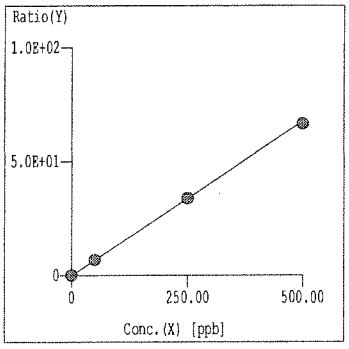
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.486E-001*X +1.325E-001
X = 1.823E+000*Y -2.415E-001
DL = 2.725E-02 ppb
BEC = 2.415E-01 ppb

Step Mass Element	ISTD	Unit
(2) 75 As	72	ppb



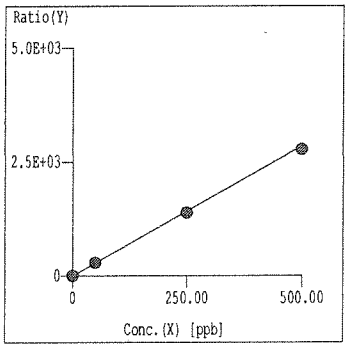
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.429E-001*X +2.028E-002
X = 1.555E+000*Y -3.155E-002
DL = 4.154E-03 ppb
BEC = 3.155E-02 ppb

Step Mass Element	ISTD	Unit
(1) 78 Se	72	ppb



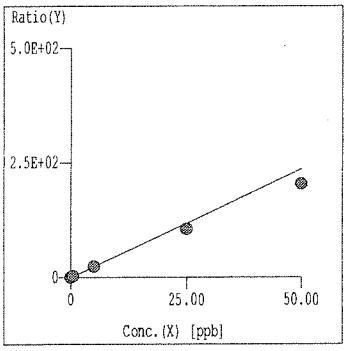
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.354E-001*X +1.456E-003
X = 7.385E+000*Y -1.075E-002
DL = 1.099E-02 ppb
BEC = 1.075E-02 ppb

Step Mass Element	ISTD	Unit
(3) 88 Sr	72	ppb



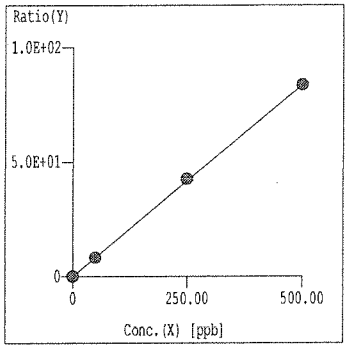
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.699E+000*X +8.209E-002
X = 1.755E-001*Y -1.441E-002
DL = 5.375E-03 ppb
BEC = 1.441E-02 ppb

Step Mass Element	ISTD	Unit
(3) 90 Zr	72	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 4.718E+000*X +9.344E-002
X = 2.120E-001*Y -1.981E-002
DL = 5.609E-03 ppb
BEC = 1.981E-02 ppb

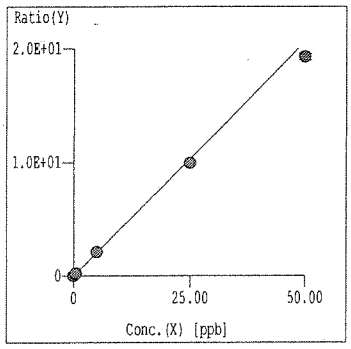
Step Mass Element	ISTD	Unit
(3) 95 Mo	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.672E-001*X +1.513E-003
X = 5.979E+000*Y -9.046E-003
DL = 7.515E-03 ppb
BEC = 9.046E-03 ppb

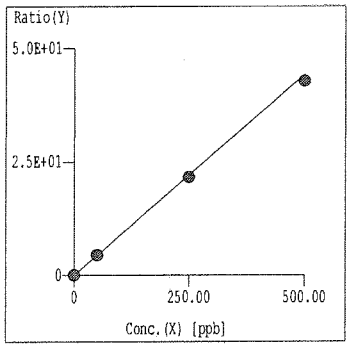
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 107 Ag	115	ppb



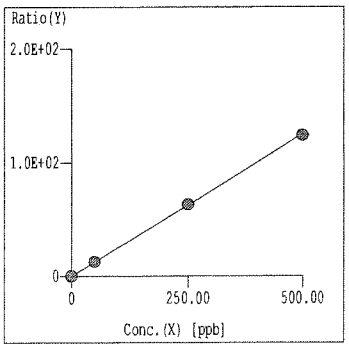
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.128E-001*X +8.581E-004
X = 2.423E+000*Y -2.079E-003
DL = 1.219E-03 ppb
BEC = 2.079E-03 ppb

Step Mass Element	ISTD	Unit
(3) 111 Cd	115	ppb



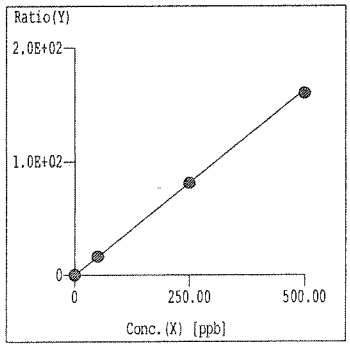
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.836E-002*X +5.717E-004
X = 1.132E+001*Y -6.470E-003
DL = 4.041E-03 ppb
BEC = 6.470E-03 ppb

Step Mass Element	ISTD	Unit
(3) 118 Sn	115	ppb



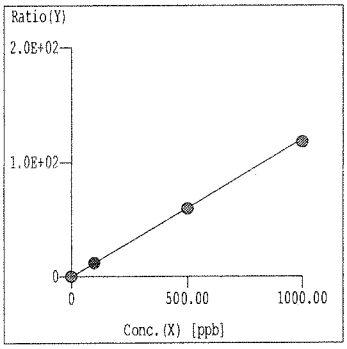
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.509E-001*X +2.080E-003
X = 3.985E+000*Y -8.288E-003
DL = 1.671E-03 ppb
BEC = 8.288E-03 ppb

Step Mass Element	ISTD	Unit
(3) 121 Sb	115	ppb



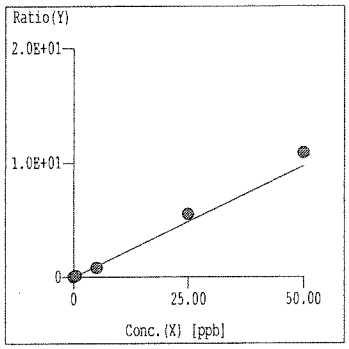
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.262E-001*X +7.530E-003
X = 3.065E+000*Y -2.308E-002
DL = 7.697E-03 ppb
BEC = 2.308E-02 ppb

Step Mass Element	ISTD	Unit
(3) 137 Ba	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.203E-001*X +1.042E-003
X = 8.314E+000*Y -8.660E-003
DL = 3.043E-03 ppb
BEC = 8.660E-03 ppb

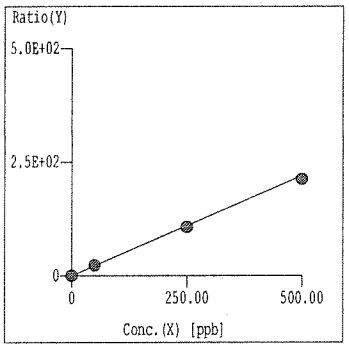
Step Mass Element	ISTD	Unit
(3) 182 W	159	ppb



Curve Fit: Y=aX+b
r = 0.9996
Y = 1.944E-001*X +1.720E-003
X = 5.144E+000*Y -8.846E-003
DL = 4.255E-03 ppb
BEC = 8.846E-03 ppb

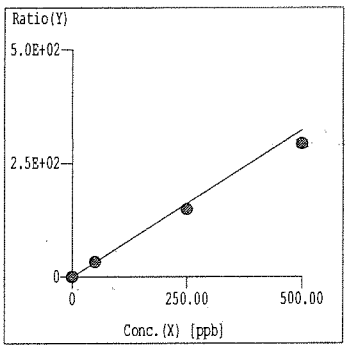
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



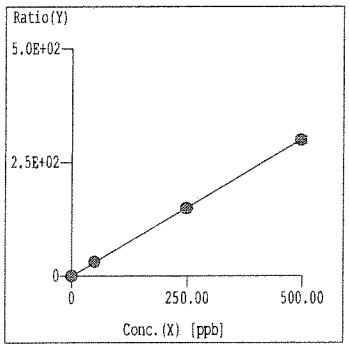
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.399E-001*X +3.466E-003
X = 2.273E+000*Y -7.881E-003
DL = 4.445E-04 ppb
BEC = 7.881E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.450E-001*X +1.004E-002
X = 1.550E+000*Y -1.556E-002
DL = 1.125E-03 ppb
BEC = 1.556E-02 ppb

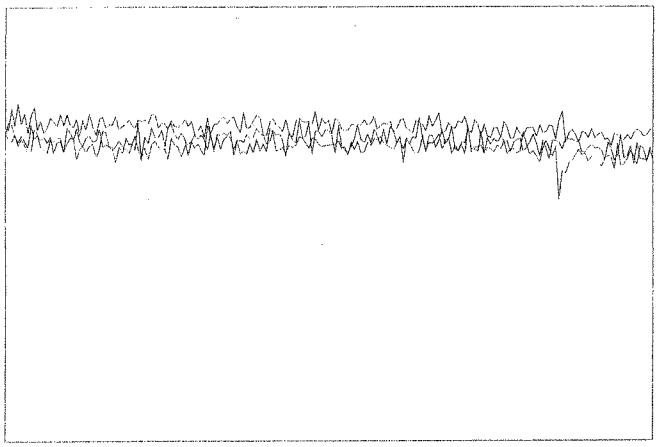
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.038E-001*X +7.508E-004
X = 1.656E+000*Y -1.243E-003
DL = 6.348E-04 ppb
BEC = 1.243E-03 ppb

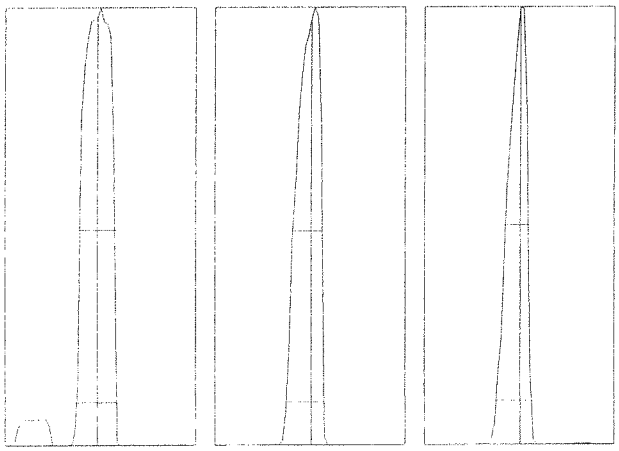
Tune Report

Tune File : NORM.U
Comment : i98e13



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.773%
Doubly Charged:	70/140	1.193%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	13278.0	13826.7	3.13	4.30
89	100,000	71521.0	72652.6	2.44	8.60
205	50,000	32192.0	33929.4	3.29	12.10
156/140	5	1.743%	1.829%	5.55	
70/140	2	1.377%	1.272%	4.89	



m/z:	7	89	205
Height:	12,346	66,717	31,834
Axis:	7.00	89.05	205.05
W-50%:	0.60	0.50	0.40
W-10%:	0.6500	0.600	0.600

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : May 26, 2016 11:17:48
Printed : May 26, 2016 11:17:51

Tune Report

Tune File : NORM.U
Comment : i98e13

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	135
RF Matching	:	1.78 V	Extract 2	:	-110 V	AMU Offset	:	129
Smpl Depth	:	8 mm	Omega Bias-ce	:	-22 V	Axis Gain	:	1.0006
Torch-H	:	-0.3 mm	Omega Lens-ce	:	0.6 V	Axis Offset	:	-0.01
Torch-V	:	-0.2 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.89 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.12 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2330 V
Sample Pump	:	--- rps	OctP RF	:	170 V	Pulse HV	:	1760 V
S/C Temp	:	2 degC	OctP Bias	:	-6 V			

===Reaction Cell===

Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

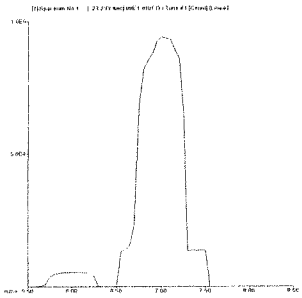
Generated : May 26, 2016 11:17:48
Printed : May 26, 2016 11:17:53

6020 QC Tune Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13001.D
Date Acquired:	May 26 2016 12:39 pm
Acq. Method:	TN6020_C.M
Operator:	CCapul
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	0.70	5.00	
59 Co	1.01	5.00	
115 In	2.58	5.00	
205 Tl	2.35	5.00	



7 Li

Mass Calib.

Actual: 7.05

Required: 6.90 - 7.10

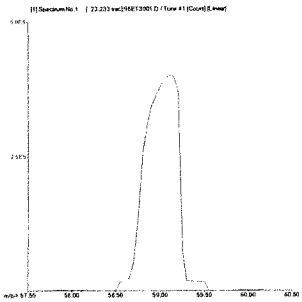
Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:



59 Co

Mass Calib.

Actual: 59.10

Required: 58.90 - 59.10

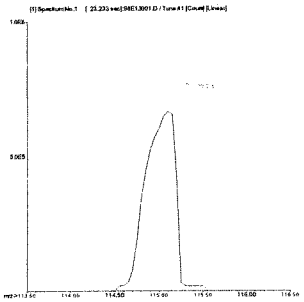
Flag:

Peak Width-10%

Actual: 0.50

Limit 0.90

Flag:



115 In

Mass Calib.

Actual: 115.05

Required: 114.90 - 115.10

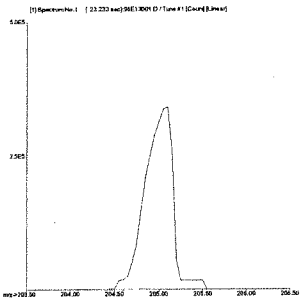
Flag:

Peak Width-10%

Actual: 0.45

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.05

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.50

Limit 0.90

Flag:

Calibration Blank QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13003.D\98E13003.D#
Date Acquired: May 26 2016 12:47 pm
Operator: CCapul
Sample Name: BLNK
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update: May 26 2016 12:50 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	CPS RSD(%)
6	Li	862868.19	A	16080.00	1.86
7	Li	57605.27	P	929.90	1.61
9	Be	61.11	P	11.71	19.16
11	B	3186.07	P	141.10	4.43
23	Na	107369.40	P	2875.00	2.68
24	Mg	28195.69	P	299.50	1.06
27	Al	23546.90	P	608.30	2.58
28	Si	3177.17	P	43.35	1.36
31	P	23766.85	P	310.50	1.31
39	K	21503.01	P	944.40	4.39
40	Ca	135364.59	P	8133.00	6.01
45	Sc	1655362.00	A	92630.00	5.60
45	Sc	176501.09	P	3858.00	2.19
45	Sc	4434656.00	A	75630.00	1.71
47	Ti	171.12	P	10.71	6.26
51	V	1022.94	P	18.09	1.77
52	Cr	278.89	P	7.73	2.77
55	Mn	5980.50	P	166.80	2.79
56	Fe	25359.37	P	1256.00	4.95
59	Co	468.92	P	25.02	5.34
60	Ni	505.13	P	27.20	5.38
63	Cu	1224.07	P	31.42	2.57
66	Zn	8645.49	P	131.10	1.52
72	Ge	499718.19	P	29990.00	6.00
72	Ge	117123.10	P	3067.00	2.62
72	Ge	968972.63	A	21910.00	2.26
75	As	26.44	P	2.34	8.85
78	Se	7.33	P	3.71	50.62
88	Sr	1527.93	P	83.83	5.49
90	Zr	826.73	P	57.84	7.00
95	Mo	168.90	P	7.70	4.56
107	Ag	85.56	P	18.36	21.46
111	Cd	36.47	P	5.50	15.08
115	In	6673626.00	A	89740.00	1.34
118	Sn	335.57	P	41.41	12.34
121	Sb	657.82	P	32.38	4.92
137	Ba	221.12	P	10.71	4.84
159	Tb	7629962.00	A	162500.00	2.13
182	W	144.45	P	15.75	10.90
205	Tl	356.69	P	47.26	13.25
208	Pb	1262.30	P	21.69	1.72
209	Bi	4066943.00	A	60430.00	1.49
235	U	14.45	P	10.71	74.14
238	U	174.45	P	19.53	11.20

Calibration Blank QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#
Date Acquired: May 26 2016 12:52 pm
Operator: CCapul
Sample Name: S0
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update: May 26 2016 12:50 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	CPS RSD(%)
6	Li	855442.00	A	8976.00	1.05
7	Li	56790.79	P	589.40	1.04
9	Be	52.22	P	16.44	31.48
11	B	830.06	P	25.17	3.03
23	Na	123161.50	P	511.50	0.42
24	Mg	15410.68	P	247.30	1.60
27	Al	3798.48	P	64.70	1.70
28	Si	1797.98	P	15.03	0.84
31	P	22879.44	P	253.00	1.11
39	K	25727.31	P	503.50	1.96
40	Ca	25783.14	P	476.90	1.85
45	Sc	1984276.00	A	25290.00	1.27
45	Sc	203946.80	P	2410.00	1.18
45	Sc	4465365.00	A	49860.00	1.12
47	Ti	100.00	P	8.82	8.82
51	V	1139.17	P	40.83	3.58
52	Cr	258.45	P	8.95	3.46
55	Mn	4061.89	P	63.13	1.55
56	Fe	4528.75	P	167.10	3.69
59	Co	365.58	P	29.88	8.17
60	Ni	525.79	P	30.79	5.86
63	Cu	717.80	P	10.80	1.50
66	Zn	1180.10	P	85.06	7.21
72	Ge	585533.19	P	4290.00	0.73
72	Ge	133876.70	P	1168.00	0.87
72	Ge	993526.00	A	42240.00	4.25
75	As	27.11	P	1.39	5.12
78	Se	8.00	P	2.91	36.33
88	Sr	744.50	P	71.91	9.66
90	Zr	648.93	P	77.20	11.90
95	Mo	104.45	P	26.94	25.79
107	Ag	55.56	P	10.71	19.28
111	Cd	24.33	P	8.02	32.95
115	In	6583702.00	A	42560.00	0.65
118	Sn	136.68	P	8.82	6.46
121	Sb	446.69	P	58.12	13.01
137	Ba	64.45	P	7.70	11.95
159	Tb	7699524.00	A	112500.00	1.46
182	W	130.01	P	20.82	16.02
205	Tl	266.68	P	8.82	3.31
208	Pb	764.49	P	27.15	3.55
209	Bi	4117964.00	A	24340.00	0.59
235	U	15.56	P	9.62	61.86
238	U	46.67	P	10.00	21.43

Calibration Standard QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13005.D\98E13005.D#
Date Acquired: May 26 2016 12:57 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update: May 26 2016 12:55 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	CPS RSD(%)
6 Li	867640.13	A	15220.00	1.75
7 Li	60609.13	P	1048.00	1.73
9 Be	1759.08	P	103.00	5.86
11 B	3229.41	P	15.75	0.49
23 Na	343108.41	P	1734.00	0.51
24 Mg	917139.50	A	10880.00	1.19
27 Al	1227776.00	A	21440.00	1.75
28 Si	122372.90	P	2219.00	1.81
31 P	57047.48	P	559.00	0.98
39 K	50699.77	P	359.30	0.71
40 Ca	534781.00	P	11470.00	2.14
45 Sc	2027954.00	A	1798.00	0.09
45 Sc	209089.50	P	1010.00	0.48
45 Sc	4518461.00	A	51740.00	1.15
47 Ti	1813.53	P	16.67	0.92
51 V	4282.07	P	79.66	1.86
52 Cr	3971.30	P	46.29	1.17
55 Mn	32474.43	P	254.30	0.78
56 Fe	1141648.00	A	8775.00	0.77
59 Co	21146.04	P	207.50	0.98
60 Ni	2264.00	P	31.63	1.40
63 Cu	5083.93	P	38.02	0.75
66 Zn	8324.13	P	76.12	0.91
72 Ge	594057.13	P	3662.00	0.62
72 Ge	136125.00	P	1176.00	0.86
72 Ge	990614.88	A	12210.00	1.23
75 As	488.24	P	22.16	4.54
78 Se	417.79	P	10.63	2.54
88 Sr	31373.39	P	256.30	0.82
90 Zr	29935.59	P	51.01	0.17
95 Mo	5461.41	P	132.30	2.42
107 Ag	14667.01	P	313.40	2.14
111 Cd	3240.56	P	6.59	0.20
115 In	6711246.00	A	81640.00	1.22
118 Sn	8760.13	P	273.70	3.12
121 Sb	12039.65	P	56.89	0.47
137 Ba	4420.97	P	124.30	2.81
159 Tb	7936553.00	A	50820.00	0.64
182 W	9074.96	P	171.80	1.89
205 Tl	19787.46	P	326.70	1.65
208 Pb	26753.05	P	209.40	0.78
209 Bi	4210583.00	A	55220.00	1.31
235 U	175.56	P	11.71	6.67
238 U	24704.18	P	74.65	0.30

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	867640.13	1.75	855442.00	101.4	60 - 125	
45 Sc	2027953.50	0.09	1984276.00	102.2	60 - 125	
45 Sc	209089.52	0.48	203946.81	102.5	60 - 125	
45 Sc	4518461.00	1.15	4465365.00	101.2	60 - 125	
72 Ge	594057.06	0.62	585533.19	101.5	60 - 125	
72 Ge	136125.05	0.86	133876.66	101.7	60 - 125	
72 Ge	990614.88	1.23	993526.00	99.7	60 - 125	
115 In	6711246.50	1.22	6583701.50	101.9	60 - 125	
159 Tb	7936553.00	0.64	7699524.00	103.1	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

--- :Element Failures
0 :ISTD Failures

--- :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13006.D\98E13006.D#
Date Acquired: May 26 2016 01:01 pm
Operator: CCapul
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update: May 26 2016 01:00 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	CPS RSD(%)
6 Li	768213.13	A	8089.00	1.05
7 Li	91947.04	P	1028.00	1.12
9 Be	16449.74	P	308.30	1.87
11 B	25360.15	P	80.85	0.32
23 Na	21102650.00	A	188900.00	0.90
24 Mg	81548560.00	A	1945000.00	2.39
27 Al	111095000.00	A	1931000.00	1.74
28 Si	576333.31	P	6033.00	1.05
31 P	85572.84	P	1194.00	1.40
39 K	2407176.00	A	41970.00	1.74
40 Ca	44791160.00	A	729500.00	1.63
45 Sc	2053737.00	A	11600.00	0.56
45 Sc	208121.59	P	3145.00	1.51
45 Sc	4468680.00	A	72410.00	1.62
47 Ti	146186.50	P	2357.00	1.61
51 V	288115.50	P	1221.00	0.42
52 Cr	358409.81	P	1685.00	0.47
55 Mn	15026820.00	A	89350.00	0.59
56 Fe	107768700.00	A	1047000.00	0.97
59 Co	1976302.00	A	21220.00	1.07
60 Ni	164537.91	P	195.30	0.12
63 Cu	430803.91	P	1940.00	0.45
66 Zn	271984.59	P	561.90	0.21
72 Ge	595117.81	P	1199.00	0.20
72 Ge	135860.59	P	478.80	0.35
72 Ge	985792.50	A	4109.00	0.42
75 As	43686.18	P	294.90	0.68
78 Se	40742.98	P	224.10	0.55
88 Sr	2845620.00	A	7598.00	0.27
90 Zr	234501.80	P	1780.00	0.76
95 Mo	528102.19	P	3850.00	0.73
107 Ag	133165.30	P	983.20	0.74
111 Cd	281834.50	P	1586.00	0.56
115 In	6366631.00	A	48880.00	0.77
118 Sn	805149.31	P	8423.00	1.05
121 Sb	1043557.00	A	3749.00	0.36
137 Ba	767502.00	M	3656.00	0.48
159 Tb	7745489.00	A	69930.00	0.90
182 W	63331.24	P	994.60	1.57
205 Tl	1753739.00	A	19560.00	1.12
208 Pb	2518477.00	A	33220.00	1.32
209 Bi	4051965.00	A	95130.00	2.35
235 U	17949.12	P	111.40	0.62
238 U	2427301.00	A	7009.00	0.29

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	768213.13	1.05	855442.00	89.8	60 - 125	
45 Sc	2053737.50	0.56	1984276.00	103.5	60 - 125	
45 Sc	208121.63	1.51	203946.81	102.0	60 - 125	
45 Sc	4468680.50	1.62	4465365.00	100.1	60 - 125	
72 Ge	595117.81	0.20	585533.19	101.6	60 - 125	
72 Ge	135860.58	0.35	133876.66	101.5	60 - 125	
72 Ge	985792.50	0.42	993526.00	99.2	60 - 125	
115 In	6366631.00	0.77	6583701.50	96.7	60 - 125	
159 Tb	7745489.00	0.90	7699524.00	100.6	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

--- :Element Failures
0 :ISTD Failures

--- :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13007.D\98E13007.D#
Date Acquired: May 26 2016 01:06 pm
Operator: CCapul
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update: May 26 2016 01:04 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	CPS RSD(%)
6 Li	802329.50	A	15110.00	1.88
7 Li	264664.59	P	2333.00	0.88
9 Be	82762.43	P	1712.00	2.07
11 B	123407.40	P	368.10	0.30
23 Na	101360800.00	A	1419000.00	1.40
24 Mg	408185700.00	A	4470000.00	1.10
27 Al	565209470.00	A	3796000.00	0.67
28 Si	2926051.00	A	57100.00	1.95
31 P	349300.81	P	2320.00	0.66
39 K	11468460.00	A	133300.00	1.16
40 Ca	223392500.00	A	5449000.00	2.44
45 Sc	2086323.00	A	16470.00	0.79
45 Sc	208691.30	P	2549.00	1.22
45 Sc	4579120.00	A	18230.00	0.40
47 Ti	745987.31	M	6722.00	0.90
51 V	1450697.00	A	19560.00	1.35
52 Cr	1740884.00	A	23780.00	1.37
55 Mn	74124848.00	A	409200.00	0.55
56 Fe	520853180.00	A	5472000.00	1.05
59 Co	9593461.00	A	69400.00	0.72
60 Ni	774624.31	M	9715.00	1.25
63 Cu	2063514.00	A	13100.00	0.63
66 Zn	1320415.00	A	11970.00	0.91
72 Ge	581780.63	P	2394.00	0.41
72 Ge	132826.09	P	1217.00	0.92
72 Ge	983445.00	A	8307.00	0.84
75 As	214022.30	P	884.00	0.41
78 Se	196858.50	P	1767.00	0.90
88 Sr	13627590.00	A	112700.00	0.83
90 Zr	1037569.00	A	4390.00	0.42
95 Mo	2686603.00	A	10640.00	0.40
107 Ag	627105.69	P	3674.00	0.59
111 Cd	1360373.00	A	21980.00	1.62
115 In	6308165.00	A	80880.00	1.28
118 Sn	3990235.00	A	33430.00	0.84
121 Sb	5112961.00	A	19090.00	0.37
137 Ba	3751507.00	A	9845.00	0.26
159 Tb	7642286.00	A	68060.00	0.89
182 W	422465.69	P	5371.00	1.27
205 Tl	8147824.00	A	40930.00	0.50
208 Pb	11326460.00	A	61590.00	0.54
209 Bi	3866715.00	A	1362.00	0.04
235 U	87599.35	P	989.30	1.13
238 U	11401990.00	A	98920.00	0.87

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	802329.50	1.88	855442.00	93.8	60 - 125	
45 Sc	2086323.30	0.79	1984276.00	105.1	60 - 125	
45 Sc	208691.34	1.22	203946.81	102.3	60 - 125	
45 Sc	4579119.50	0.40	4465365.00	102.5	60 - 125	
72 Ge	581780.63	0.41	585533.19	99.4	60 - 125	
72 Ge	132826.13	0.92	133876.66	99.2	60 - 125	
72 Ge	983445.00	0.84	993526.00	99.0	60 - 125	
115 In	6308165.00	1.28	6583701.50	95.8	60 - 125	
159 Tb	7642285.50	0.89	7699524.00	99.3	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

--- :Element Failures
0 :ISTD Failures

--- :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13008.D\98E13008.D#
Date Acquired: May 26 2016 01:10 pm
Operator: CCapul
Sample Name: S4 500
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update: May 26 2016 01:08 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	CPS RSD(%)
6 Li	822956.88	A	7204.00	0.88
7 Li	493869.00	P	8916.00	1.81
9 Be	170322.70	P	2774.00	1.63
11 B	248622.50	P	1867.00	0.75
23 Na	203416700.00	A	5536000.00	2.72
24 Mg	823520000.00	A	9048000.00	1.10
27 Al	1142860000.00	A	10090000.00	0.88
28 Si	5816737.00	A	138800.00	2.39
31 P	678349.31	P	4417.00	0.65
39 K	22816340.00	A	225200.00	0.99
40 Ca	451483900.00	A	7563000.00	1.68
45 Sc	2093497.00	A	58440.00	2.79
45 Sc	210068.00	P	1221.00	0.58
45 Sc	4725123.00	A	45470.00	0.96
47 Ti	1560893.00	A	17310.00	1.11
51 V	2931571.00	A	23660.00	0.81
52 Cr	3486373.00	A	31260.00	0.90
55 Mn	148943200.00	A	1217000.00	0.82
56 Fe	1026817000.00	A	23570000.00	2.30
59 Co	19113160.00	A	187400.00	0.98
60 Ni	1535459.00	A	11440.00	0.75
63 Cu	4028424.00	A	31800.00	0.79
66 Zn	2580714.00	A	16220.00	0.63
72 Ge	578745.38	P	1062.00	0.18
72 Ge	133596.59	P	1300.00	0.97
72 Ge	966828.50	A	7751.00	0.80
75 As	425605.31	P	1909.00	0.45
78 Se	384593.31	P	4473.00	1.16
88 Sr	26795020.00	A	385400.00	1.44
90 Zr	1970098.00	A	34290.00	1.74
95 Mo	5160189.00	A	25320.00	0.49
107 Ag	1188577.00	A	12810.00	1.08
111 Cd	2635480.00	A	6709.00	0.25
115 In	6171072.00	A	56600.00	0.92
118 Sn	7657113.00	A	40970.00	0.54
121 Sb	9878482.00	A	23100.00	0.23
137 Ba	7254632.00	A	40390.00	0.56
159 Tb	7471850.00	A	111900.00	1.50
182 W	812744.69	A	460.30	0.06
205 Tl	15828270.00	A	122500.00	0.77
208 Pb	21851590.00	A	285600.00	1.31
209 Bi	3680127.00	A	42440.00	1.15
235 U	169669.59	P	1465.00	0.86
238 U	22318620.00	A	237400.00	1.06

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	822956.94	0.88	855442.00	96.2	60 - 125	
45 Sc	2093496.90	2.79	1984276.00	105.5	60 - 125	
45 Sc	210067.98	0.58	203946.81	103.0	60 - 125	
45 Sc	4725123.50	0.96	4465365.00	105.8	60 - 125	
72 Ge	578745.44	0.18	585533.19	98.8	60 - 125	
72 Ge	133596.63	0.97	133876.66	99.8	60 - 125	
72 Ge	966828.50	0.80	993526.00	97.3	60 - 125	
115 In	6171072.50	0.92	6583701.50	93.7	60 - 125	
159 Tb	7471850.00	1.50	7699524.00	97.0	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13009.D\98E13009.D#
Date Acquired:	May 26 2016 01:14 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	31.05	ppb	309160.3	0.96	30.00	90 - 110	
9 Be	32.02	ppb	103359.7	1.31	30.00	90 - 110	
11 B	30.97	ppb	76977.5	2.52	30.00	90 - 110	
23 Na	29400.00	ppb	120333200.0	0.74	30000.00	90 - 110	
24 Mg	29550.00	ppb	473323100.0	1.29	30000.00	90 - 110	
27 Al	30270.00	ppb	657034880.0	0.67	30000.00	90 - 110	
28 Si	3093.00	ppb	3531612.0	1.44	3000.00	90 - 110	
31 P	289.40	ppb	388756.0	1.03	300.00	90 - 110	
39 K	29290.00	ppb	13184820.0	0.95	30000.00	90 - 110	
40 Ca	30300.00	ppb	271285180.0	0.75	30000.00	90 - 110	
47 Ti	295.10	ppb	866110.4	1.70	300.00	90 - 110	
51 V	301.60	ppb	1685603.0	0.26	300.00	90 - 110	
52 Cr	302.00	ppb	2047230.0	1.58	300.00	90 - 110	
55 Mn	1981.00	ppb	95492880.0	0.58	2000.00	90 - 110	
56 Fe	29920.00	ppb	615857410.0	0.45	30000.00	90 - 110	
59 Co	285.60	ppb	11005230.0	1.04	300.00	90 - 110	
60 Ni	288.20	ppb	875739.6	1.12	300.00	90 - 110	
63 Cu	295.50	ppb	2359150.0	1.16	300.00	90 - 110	
66 Zn	294.70	ppb	1544097.0	2.38	300.00	90 - 110	
75 As	298.20	ppb	246931.8	0.51	300.00	90 - 110	
78 Se	302.00	ppb	233797.7	0.48	300.00	90 - 110	
88 Sr	293.90	ppb	15984730.0	1.71	300.00	90 - 110	
90 Zr	21.24	ppb	957173.0	3.24	30.00	90 - 110	Fail
95 Mo	294.60	ppb	3014227.0	1.52	300.00	90 - 110	
107 Ag	30.32	ppb	765660.1	2.00	30.00	90 - 110	
111 Cd	292.00	ppb	1578709.0	0.72	300.00	90 - 110	
118 Sn	300.80	ppb	4618297.0	0.34	300.00	90 - 110	
121 Sb	294.90	ppb	5885981.0	0.25	300.00	90 - 110	
137 Ba	307.50	ppb	2262572.0	1.53	300.00	90 - 110	
182 W	31.00	ppb	456209.3	0.77	30.00	90 - 110	
205 Tl	297.50	ppb	9905531.0	0.77	300.00	90 - 110	
208 Pb	278.00	ppb	13572410.0	0.98	300.00	90 - 110	
235 U	2.00	ppb	102370.8	0.69	0.22	90 - 110	Fail
238 U	296.30	ppb	13541490.0	0.55	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	779873.4	1.67	855442.00	91.2	60 - 125	
45 Sc	2031907.0	1.43	1984276.00	102.4	60 - 125	
45 Sc	200991.7	0.56	203946.81	98.6	60 - 125	
45 Sc	4450275.0	0.89	4465365.00	99.7	60 - 125	
72 Ge	571684.9	1.25	585533.19	97.6	60 - 125	
72 Ge	128794.1	0.63	133876.66	96.2	60 - 125	
72 Ge	954586.8	2.43	993526.00	96.1	60 - 125	
115 In	6117834.5	0.30	6583701.50	92.9	60 - 125	
159 Tb	7568252.5	0.58	7699524.00	98.3	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

ICB QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13010.D\98E13010.D#
Date Acquired: May 26 2016 01:18 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: ICB
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update: May 26 2016 01:12 pm
Sample Type: ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.2723	ppb	49832.9	116.20	0.20	Fail
9 Be	0.0060	ppb	60.0	40.78	0.10	
11 B	0.4483	ppb	1849.1	3.58	5.00	
23 Na	-3.3180	ppb	118205.4	22.04	40.00	
24 Mg	0.6427	ppb	25031.7	17.63	10.00	
27 Al	1.4190	ppb	33796.4	86.40	20.00	
28 Si	0.9211	ppb	2876.0	10.76	20.00	
31 P	-1.5330	ppb	20482.2	19.47	10.00	
39 K	-3.0270	ppb	24639.7	21.25	20.00	
40 Ca	1.4120	ppb	38819.0	10.90	25.00	
47 Ti	0.0175	ppb	168.9	64.25	0.50	
51 V	-0.0247	ppb	1052.7	25.08	0.50	
52 Cr	0.0043	ppb	296.5	22.95	0.20	
55 Mn	0.0455	ppb	6447.4	11.49	0.20	
56 Fe	4.0960	ppb	88300.3	11.91	10.00	
59 Co	0.0065	ppb	631.2	53.20	0.20	
60 Ni	-0.0180	ppb	542.0	77.51	0.20	
63 Cu	0.0216	ppb	911.2	22.90	0.40	
66 Zn	-0.0053	ppb	1279.0	252.11	2.00	
75 As	0.0364	ppb	59.1	4.99	0.20	
78 Se	0.0639	ppb	60.2	13.35	0.20	
88 Sr	0.0058	ppb	1135.7	21.87	0.20	
90 Zr	0.0005	ppb	943.4	486.68	2.00	
95 Mo	0.1977	ppb	2313.6	6.61	0.40	
107 Ag	0.0016	ppb	102.2	13.54	0.20	
111 Cd	0.0077	ppb	84.1	45.69	0.20	
118 Sn	0.1820	ppb	3196.1	11.73	0.20	
121 Sb	0.1442	ppb	3651.8	2.36	0.40	
137 Ba	0.0077	ppb	131.1	23.98	0.20	
182 W	0.0422	ppb	780.1	12.89	1.00	
205 Tl	0.0396	ppb	1640.2	1.71	0.20	
208 Pb	0.0158	ppb	1591.2	4.73	0.10	
235 U	0.0004	ppb	22.2	59.54	1.00	
238 U	0.0437	ppb	2130.3	3.37	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	740474.1	5.78	855442.00	86.6	60 - 125	
45 Sc	2020933.9	2.85	1984276.00	101.8	60 - 125	
45 Sc	205137.4	1.96	203946.81	100.6	60 - 125	
45 Sc	4341905.5	0.26	4465365.00	97.2	60 - 125	
72 Ge	596120.4	0.81	585533.19	101.8	60 - 125	
72 Ge	135243.9	1.58	133876.66	101.0	60 - 125	
72 Ge	989503.5	6.08	993526.00	99.6	60 - 125	
115 In	6688125.0	1.23	6583701.50	101.6	60 - 125	
159 Tb	7857153.0	0.90	7699524.00	102.0	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13011.D\98E13011.D#
Date Acquired:	May 26 2016 01:22 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE2601
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	52577.9	0.0000	0.8165	ppb	18.31	50.00	
9 Be	# 3	6	1570.2	0.0000	0.5148	ppb	3.29	50.00	
11 B	# 3	6	2939.3	0.0000	0.9551	ppb	6.43	100.00	
23 Na	# 1	45	327448.7	0.0000	46.5100	ppb	0.89	50000.00	
24 Mg	# 3	45	865704.5	0.0000	54.1700	ppb	2.04	50000.00	
27 Al	# 3	45	1175690.0	0.0000	55.0700	ppb	1.65	50000.00	
28 Si	# 1	45	2634.8	0.0000	0.6621	ppb	25.07	10000.00	
31 P	# 3	45	19701.1	0.0000	-2.2450	ppb	12.03	400000.00	
39 K	# 2	45	50327.4	0.0000	49.4900	ppb	4.99	50000.00	
40 Ca	# 1	45	501806.3	0.0000	52.2700	ppb	1.69	50000.00	
47 Ti	# 3	45	1652.4	0.0000	0.5330	ppb	3.03	500.00	
51 V	# 2	45	4100.2	0.0000	0.4870	ppb	1.59	500.00	
52 Cr	# 2	45	4027.5	0.0000	0.5252	ppb	0.56	500.00	
55 Mn	# 3	45	33250.9	0.0000	0.6120	ppb	0.36	3000.00	
56 Fe	# 1	45	1156017.0	0.0000	55.1200	ppb	0.21	50000.00	
59 Co	# 3	45	21764.8	0.0000	0.5658	ppb	1.36	500.00	
60 Ni	# 2	45	2320.2	0.0000	0.5318	ppb	0.91	500.00	
63 Cu	# 2	45	5653.1	0.0000	0.5817	ppb	0.48	500.00	
66 Zn	# 3	72	24822.8	0.0000	4.2950	ppb	2.44	500.00	
75 As	# 2	72	502.9	0.0000	0.5260	ppb	4.74	500.00	
78 Se	# 1	72	440.7	0.0000	0.5277	ppb	4.60	500.00	
88 Sr	# 3	72	31206.4	0.0000	0.5347	ppb	0.32	500.00	
90 Zr	# 3	72	736.7	0.0000	-0.0041	ppb	9.46	1000.00	
95 Mo	# 3	115	6441.9	0.0000	0.5688	ppb	4.32	500.00	
107 Ag	# 3	115	14117.5	0.0000	0.5110	ppb	1.99	50.00	
111 Cd	# 3	115	3029.4	0.0000	0.5080	ppb	8.16	500.00	
118 Sn	# 3	115	9936.6	0.0000	0.5857	ppb	1.79	500.00	
121 Sb	# 3	115	12762.6	0.0000	0.5637	ppb	0.41	500.00	
137 Ba	# 3	115	4186.4	0.0000	0.5135	ppb	3.28	1000.00	
182 W	# 3	159	370.0	0.0000	0.0151	ppb	10.60	1000.00	
205 Tl	# 3	159	20478.8	0.0000	0.5777	ppb	3.24	500.00	
208 Pb	# 3	159	28058.7	0.0000	0.5316	ppb	2.69	500.00	
235 U	# 3	159	216.7	0.0000	0.0040	ppb	11.22	5.00	
238 U	# 3	159	26346.8	0.0000	0.5475	ppb	2.45	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	717991.31	1.84	855442.00	83.9	60 - 125	
45 Sc # 1	2062164.50	1.53	1984276.00	103.9	60 - 125	
45 Sc # 2	211872.13	0.69	203946.81	103.9	60 - 125	
45 Sc # 3	4363338.50	0.97	4465365.00	97.7	60 - 125	
72 Ge # 1	604604.19	1.42	585533.19	103.3	60 - 125	
72 Ge # 2	140271.41	0.99	133876.66	104.8	60 - 125	
72 Ge # 3	997231.13	0.54	993526.00	100.4	60 - 125	
115 In # 3	6666810.50	0.87	6583701.50	101.3	60 - 125	
159 Tb # 3	7952477.50	1.32	7699524.00	103.3	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13012.D\98E13012.D#
Date Acquired:	May 26 2016 01:27 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.43	ppb	44826.0	9.76	---	
9 Be	0.02	ppb	81.1	33.39	---	
11 B	0.61	ppb	1954.7	1.94	---	
23 Na	48540.00	ppb	195883700.0	1.55	60000.00	
24 Mg	48230.00	ppb	713728000.0	0.67	60000.00	
27 Al	49650.00	ppb	995690500.0	1.93	60000.00	
28 Si	3.22	ppb	5439.1	2.18	---	
31 P	50680.00	ppb	59204768.0	1.12	60000.00	
39 K	49540.00	ppb	22134060.0	1.30	60000.00	
40 Ca	49280.00	ppb	435191810.0	1.28	60000.00	
47 Ti	1067.00	ppb	2893580.0	0.84	1200.00	
51 V	0.04	ppb	1361.4	20.01	---	
52 Cr	0.68	ppb	4868.3	2.82	---	
55 Mn	0.36	ppb	19916.2	8.76	---	
56 Fe	48960.00	ppb	993579780.0	1.38	60000.00	
59 Co	0.13	ppb	5160.2	8.00	---	
60 Ni	0.06	ppb	772.5	27.51	---	
63 Cu	0.39	ppb	3820.2	2.31	---	
66 Zn	1.45	ppb	8360.9	4.07	---	
75 As	0.08	ppb	89.6	3.18	---	
78 Se	0.09	ppb	74.9	16.36	---	
88 Sr	0.37	ppb	19844.2	3.11	---	
90 Zr	1.08	ppb	46834.3	1.32	---	
95 Mo	1000.00	ppb	9772545.0	0.27	1200.00	
107 Ag	0.02	ppb	493.4	5.42	---	
111 Cd	0.17	ppb	904.9	7.87	---	
118 Sn	0.11	ppb	1761.3	4.33	---	
121 Sb	0.11	ppb	2448.1	4.78	---	
137 Ba	0.10	ppb	784.5	5.98	---	
182 W	0.09	ppb	1417.9	3.60	---	
205 Tl	0.04	ppb	1525.8	16.99	---	
208 Pb	0.13	ppb	6843.3	7.32	---	
235 U	0.00	ppb	34.4	37.03	---	
238 U	0.04	ppb	1795.9	19.31	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	648670.4	0.52	855442.00	75.8	60 - 125	
45 Sc	2003893.9	1.77	1984276.00	101.0	60 - 125	
45 Sc	199634.0	1.29	203946.81	97.9	60 - 125	
45 Sc	4111110.0	0.56	4465365.00	92.1	60 - 125	
72 Ge	553807.9	1.01	585533.19	94.6	60 - 125	
72 Ge	129754.3	0.42	133876.66	96.9	60 - 125	
72 Ge	900355.1	0.75	993526.00	90.6	60 - 125	
115 In	5843226.0	0.06	6583701.50	88.8	60 - 125	
159 Tb	7117188.0	1.01	7699524.00	92.4	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13013.D\98E13013.D#
Date Acquired:	May 26 2016 01:32 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.42	ppb	178984.6	1.49	20.00	80 - 120	
9 Be	21.14	ppb	55382.7	2.00	20.00	80 - 120	
11 B	19.67	ppb	39910.4	3.72	20.00	80 - 120	
23 Na	48280.00	ppb	191466210.0	0.46	50000.00	80 - 120	
24 Mg	47870.00	ppb	704632580.0	1.07	50000.00	80 - 120	
27 Al	49550.00	ppb	988408900.0	1.09	50000.00	80 - 120	
28 Si	201.20	ppb	224326.9	1.40	200.00	80 - 120	
31 P	50270.00	ppb	58409100.0	1.26	50000.00	80 - 120	
39 K	49540.00	ppb	21783150.0	1.09	50000.00	80 - 120	
40 Ca	49360.00	ppb	428384190.0	1.32	50000.00	80 - 120	
47 Ti	1097.00	ppb	2957608.0	0.30	1000.00	80 - 120	
51 V	20.05	ppb	110573.8	1.72	20.00	80 - 120	
52 Cr	20.62	ppb	136852.3	1.93	20.00	80 - 120	
55 Mn	21.04	ppb	935808.1	0.77	20.00	80 - 120	
56 Fe	49710.00	ppb	991358780.0	0.72	50000.00	80 - 120	
59 Co	20.26	ppb	717773.4	0.38	20.00	80 - 120	
60 Ni	20.18	ppb	60445.8	2.40	20.00	80 - 120	
63 Cu	20.26	ppb	158681.8	2.50	20.00	80 - 120	
66 Zn	20.70	ppb	103875.1	1.25	20.00	80 - 120	
75 As	20.71	ppb	17029.9	0.61	20.00	80 - 120	
78 Se	21.32	ppb	16028.4	0.77	20.00	80 - 120	
88 Sr	20.17	ppb	1040019.0	0.41	20.00	80 - 120	
90 Zr	9.56	ppb	408788.2	0.34	20.00	80 - 120	Fail
95 Mo	1007.00	ppb	9879890.0	1.53	1000.00	80 - 120	
107 Ag	18.70	ppb	452810.4	0.58	20.00	80 - 120	
111 Cd	19.98	ppb	103617.3	0.71	20.00	80 - 120	
118 Sn	19.64	ppb	289165.7	1.19	20.00	80 - 120	
121 Sb	20.07	ppb	384634.8	0.85	20.00	80 - 120	
137 Ba	20.29	ppb	143208.4	1.24	20.00	80 - 120	
182 W	22.69	ppb	315180.3	0.26	20.00	80 - 120	
205 Tl	19.94	ppb	626630.4	1.32	20.00	80 - 120	
208 Pb	18.96	ppb	873955.8	1.00	20.00	80 - 120	
235 U	0.13	ppb	6505.4	2.40	0.14	80 - 120	
238 U	19.97	ppb	861341.3	0.74	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	632932.8	2.71	855442.00	74.0	60 - 125	
45 Sc	1969188.9	0.94	1984276.00	99.2	60 - 125	
45 Sc	196488.6	2.26	203946.81	96.3	60 - 125	
45 Sc	4089230.8	0.47	4465365.00	91.6	60 - 125	
72 Ge	554866.9	0.63	585533.19	94.8	60 - 125	
72 Ge	127714.0	0.77	133876.66	95.4	60 - 125	
72 Ge	904063.3	0.90	993526.00	91.0	60 - 125	
115 In	5866323.0	0.94	6583701.50	89.1	60 - 125	
159 Tb	7140872.5	0.86	7699524.00	92.7	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13015.D\98E13015.D#
Date Acquired:	May 26 2016 01:41 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLE2603
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	43318.4	0.0000	1.8040	ppb	6.78	50.00	
9 Be	# 3	6	2522.6	0.0000	1.1660	ppb	6.02	50.00	
11 B	# 3	6	18788.8	0.0000	11.1800	ppb	1.56	100.00	
23 Na	# 1	45	512718.4	0.0000	95.5800	ppb	0.57	50000.00	
24 Mg	# 3	45	1475459.0	0.0000	103.1000	ppb	2.65	50000.00	
27 Al	# 3	45	2007207.0	0.0000	104.3000	ppb	3.11	50000.00	
28 Si	# 1	45	2344.8	0.0000	0.4812	ppb	31.13	10000.00	
31 P	# 3	45	20546.4	0.0000	0.2293	ppb	352.25	400000.00	
39 K	# 2	45	72507.8	0.0000	104.2000	ppb	3.22	50000.00	
40 Ca	# 1	45	927027.3	0.0000	102.7000	ppb	1.69	50000.00	
47 Ti	# 3	45	3034.9	0.0000	1.1270	ppb	2.25	500.00	
51 V	# 2	45	6758.7	0.0000	0.9979	ppb	1.99	500.00	
52 Cr	# 2	45	7140.9	0.0000	1.0130	ppb	2.98	500.00	
55 Mn	# 3	45	56680.0	0.0000	1.2370	ppb	2.57	3000.00	
56 Fe	# 1	45	2213148.0	0.0000	109.5000	ppb	0.64	50000.00	
59 Co	# 3	45	38308.7	0.0000	1.1130	ppb	1.40	500.00	
60 Ni	# 2	45	3814.8	0.0000	1.0610	ppb	3.13	500.00	
63 Cu	# 2	45	9955.0	0.0000	1.1540	ppb	2.05	500.00	
66 Zn	# 3	72	53933.1	0.0000	10.2900	ppb	0.76	500.00	
75 As	# 2	72	917.4	0.0000	1.0270	ppb	1.76	500.00	
78 Se	# 1	72	802.3	0.0000	0.9984	ppb	3.26	500.00	
88 Sr	# 3	72	115166.7	0.0000	2.1510	ppb	0.62	500.00	
90 Zr	# 3	72	1210.1	0.0000	0.0077	ppb	24.69	1000.00	
95 Mo	# 3	115	12986.2	0.0000	1.1830	ppb	0.24	500.00	
107 Ag	# 3	115	26629.5	0.0000	0.9885	ppb	1.99	50.00	
111 Cd	# 3	115	5674.1	0.0000	0.9795	ppb	1.94	500.00	
118 Sn	# 3	115	16295.8	0.0000	0.9889	ppb	2.03	500.00	
121 Sb	# 3	115	21485.0	0.0000	0.9881	ppb	1.99	500.00	
137 Ba	# 3	115	7998.5	0.0000	1.0130	ppb	2.22	1000.00	
182 W	# 3	159	338.9	0.0000	0.0137	ppb	10.15	1000.00	
205 Tl	# 3	159	35955.7	0.0000	1.0500	ppb	0.83	500.00	
208 Pb	# 3	159	51646.7	0.0000	1.0200	ppb	1.57	500.00	
235 U	# 3	159	378.9	0.0000	0.0072	ppb	6.79	5.00	
238 U	# 3	159	48037.1	0.0000	1.0280	ppb	2.08	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	516909.56	0.31	855442.00	60.4	60 - 125	
45 Sc # 1	1990944.50	2.01	1984276.00	100.3	60 - 125	
45 Sc # 2	201470.53	1.20	203946.81	98.8	60 - 125	
45 Sc # 3	3938344.50	0.84	4465365.00	88.2	60 - 125	
72 Ge # 1	586924.50	1.62	585533.19	100.2	60 - 125	
72 Ge # 2	134855.16	1.30	133876.66	100.7	60 - 125	
72 Ge # 3	933374.75	1.35	993526.00	93.9	60 - 125	
115 In # 3	6512859.50	0.43	6583701.50	98.9	60 - 125	
159 Tb # 3	7728972.50	1.03	7699524.00	100.4	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13016.D\98E13016.D#
Date Acquired:	May 26 2016 01:45 pm
Operator:	CCapul
Sample Name:	CCV1
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update:	May 26 2016 01:12 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element	Conc.	CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.61 ppb	208659.50	2.34	25.00	90 - 110	
9 Be	26.81 ppb	68456.05	1.73	25.00	90 - 110	
11 B	51.48 ppb	100789.90	0.71	50.00	90 - 110	
23 Na	23700.00 ppb	95762496.00	0.78	25000.00	90 - 110	
24 Mg	24480.00 ppb	361864510.00	1.48	25000.00	90 - 110	
27 Al	24690.00 ppb	494509410.00	2.40	25000.00	90 - 110	
28 Si	2456.00 ppb	2768262.00	0.38	2500.00	90 - 110	
31 P	245.10 ppb	307068.09	0.79	250.00	90 - 110	
39 K	25080.00 ppb	11064730.00	0.55	25000.00	90 - 110	
40 Ca	24530.00 ppb	216764800.00	0.60	25000.00	90 - 110	
47 Ti	250.70 ppb	679065.88	1.60	250.00	90 - 110	
51 V	253.50 ppb	1388459.00	0.26	250.00	90 - 110	
52 Cr	252.80 ppb	1678687.00	0.93	250.00	90 - 110	
55 Mn	1546.00 ppb	68778128.00	2.20	1500.00	90 - 110	
56 Fe	24790.00 ppb	503533410.00	0.58	25000.00	90 - 110	
59 Co	249.40 ppb	8867541.00	1.15	250.00	90 - 110	
60 Ni	253.10 ppb	753396.31	1.22	250.00	90 - 110	
63 Cu	254.70 ppb	1991668.00	1.90	250.00	90 - 110	
66 Zn	248.80 ppb	1240501.00	1.52	250.00	90 - 110	
75 As	250.60 ppb	208692.91	0.33	250.00	90 - 110	
78 Se	254.20 ppb	194105.50	0.37	250.00	90 - 110	
88 Sr	249.90 ppb	12931780.00	1.23	250.00	90 - 110	
90 Zr	21.32 ppb	914045.13	1.35	25.00	90 - 110	Fail
95 Mo	253.70 ppb	2532196.00	0.67	250.00	90 - 110	
107 Ag	24.27 ppb	597874.00	0.45	25.00	90 - 110	
111 Cd	248.40 ppb	1309821.00	0.53	250.00	90 - 110	
118 Sn	253.10 ppb	3790602.00	0.73	250.00	90 - 110	
121 Sb	244.10 ppb	4752413.00	0.32	250.00	90 - 110	
137 Ba	501.90 ppb	3601909.00	0.88	500.00	90 - 110	
182 W	29.57 ppb	420069.31	0.76	25.00	90 - 110	Fail
205 Tl	254.70 ppb	8185144.00	1.17	250.00	90 - 110	
208 Pb	242.20 ppb	11413690.00	0.64	250.00	90 - 110	
235 U	1.74 ppb	85718.55	0.82	1.80	90 - 110	
238 U	255.10 ppb	11252370.00	0.71	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	616784.44	0.92	855442.00	72.1	60 - 125	
45 Sc	2005125.60	0.62	1984276.00	101.1	60 - 125	
45 Sc	196899.78	1.47	203946.81	96.5	60 - 125	
45 Sc	4106895.80	1.41	4465365.00	92.0	60 - 125	
72 Ge	563991.56	0.98	585533.19	96.3	60 - 125	
72 Ge	129502.76	0.18	133876.66	96.7	60 - 125	
72 Ge	907978.50	1.03	993526.00	91.4	60 - 125	
115 In	5967047.50	0.14	6583701.50	90.6	60 - 125	
159 Tb	7304694.00	0.72	7699524.00	94.9	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13017.D\98E13017.D#
Date Acquired:	May 26 2016 01:50 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.7130	ppb	40256.3	8.98	0.20	Fail
9 Be	0.0089	ppb	52.2	128.38	0.10	
11 B	0.4426	ppb	1383.5	6.51	5.00	
23 Na	-0.4625	ppb	126248.7	224.86	40.00	
24 Mg	3.8190	ppb	68830.0	25.83	10.00	
27 Al	3.7350	ppb	76240.1	27.26	20.00	
28 Si	0.5973	ppb	2440.3	2.48	20.00	
31 P	-0.9037	ppb	19648.6	93.79	10.00	
39 K	2.9840	ppb	26608.0	55.16	20.00	
40 Ca	3.3200	ppb	54270.5	31.93	25.00	
47 Ti	0.0725	ppb	301.1	24.31	0.50	
51 V	0.0018	ppb	1169.0	286.74	0.50	
52 Cr	0.0213	ppb	402.7	29.75	0.20	
55 Mn	0.1351	ppb	9831.0	28.99	0.20	
56 Fe	5.5820	ppb	115592.1	15.39	10.00	
59 Co	0.0260	ppb	1259.0	30.23	0.20	
60 Ni	0.0107	ppb	613.4	104.78	0.20	
63 Cu	0.0365	ppb	1002.7	1.69	0.40	
66 Zn	0.0018	ppb	1251.2	521.50	2.00	
75 As	0.0406	ppb	62.2	23.36	0.20	
78 Se	0.0509	ppb	48.7	3.18	0.20	
88 Sr	0.0239	ppb	2044.8	26.65	0.20	
90 Zr	-0.0031	ppb	740.1	70.89	2.00	
95 Mo	0.2171	ppb	2497.0	5.82	0.40	
107 Ag	0.0041	ppb	168.9	19.74	0.20	
111 Cd	0.0183	ppb	144.6	51.55	0.20	
118 Sn	0.1161	ppb	2060.3	1.81	0.20	
121 Sb	0.3073	ppb	7116.8	3.50	0.40	
137 Ba	0.0376	ppb	367.8	27.90	0.20	
182 W	0.0250	ppb	516.7	11.80	1.00	
205 Tl	0.0321	ppb	1382.4	19.46	0.20	
208 Pb	0.0276	ppb	2186.9	26.20	0.10	
235 U	0.0006	ppb	33.3	21.51	1.00	
238 U	0.0460	ppb	2243.7	8.99	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	558065.2	0.91	855442.00	65.2	60 - 125	
45 Sc	1964566.3	0.17	1984276.00	99.0	60 - 125	
45 Sc	199209.2	1.49	203946.81	97.7	60 - 125	
45 Sc	4016154.5	2.58	4465365.00	89.9	60 - 125	
72 Ge	582710.9	0.53	585533.19	99.5	60 - 125	
72 Ge	133932.0	1.29	133876.66	100.0	60 - 125	
72 Ge	937629.9	1.51	993526.00	94.4	60 - 125	
115 In	6602258.0	0.36	6583701.50	100.3	60 - 125	
159 Tb	7863225.5	0.22	7699524.00	102.1	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13018.D\98E13018.D#
Date Acquired:	May 26 2016 01:54 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	IME034SB
Misc Info:	
Vial Number:	2101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	MBS
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.7034	ppb	37388.6	6.81	0.50	Fail
9 Be	-0.0017	ppb	25.6	147.30	0.50	
11 B	0.5511	ppb	1464.6	6.68	10.00	
23 Na	1.1270	ppb	136413.1	211.27	100.00	
24 Mg	4.2880	ppb	73787.2	16.85	100.00	
27 Al	9.0900	ppb	176484.0	6.60	100.00	
28 Si	1.7260	ppb	3795.1	9.95	50.00	
31 P	5.7000	ppb	26438.6	15.06	10.00	
39 K	2.5040	ppb	26892.2	65.42	100.00	
40 Ca	17.2400	ppb	179899.6	10.01	100.00	
47 Ti	0.1052	ppb	377.8	16.63	0.50	
51 V	0.0494	ppb	1459.4	29.12	0.50	
52 Cr	0.0586	ppb	664.9	21.02	0.50	
55 Mn	0.1966	ppb	12188.7	12.18	0.50	
56 Fe	5.3120	ppb	113362.0	32.68	100.00	
59 Co	0.0259	ppb	1224.6	16.18	0.50	
60 Ni	0.0457	ppb	732.0	35.16	0.50	
63 Cu	0.1414	ppb	1867.0	11.08	0.50	
66 Zn	0.4368	ppb	3537.3	3.37	2.00	
75 As	0.0243	ppb	48.9	58.40	0.50	
78 Se	0.0371	ppb	38.2	26.17	0.50	
88 Sr	0.0406	ppb	2982.8	15.23	0.50	
90 Zr	0.0092	ppb	1302.3	14.32	5.00	
95 Mo	0.1220	ppb	1432.4	8.64	0.50	
107 Ag	0.0053	ppb	198.9	21.57	0.50	
111 Cd	0.0195	ppb	150.2	13.14	0.50	
118 Sn	3.4450	ppb	56660.3	1.82	20.00	
121 Sb	0.1327	ppb	3322.8	2.71	0.50	
137 Ba	0.0708	ppb	624.5	12.34	0.50	
182 W	0.0199	ppb	437.8	18.74	2.00	
205 Tl	0.0278	ppb	1231.3	14.04	0.50	
208 Pb	0.0679	ppb	4222.7	7.30	0.50	
235 U	0.0002	ppb	14.4	32.55	---	
238 U	0.0303	ppb	1492.4	12.19	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	519034.6	1.51	855442.00	60.7	60 - 125	
45 Sc	2022798.9	1.26	1984276.00	101.9	60 - 125	
45 Sc	202994.3	0.85	203946.81	99.5	60 - 125	
45 Sc	3904055.0	0.79	4465365.00	87.4	60 - 125	
72 Ge	590099.8	0.76	585533.19	100.8	60 - 125	
72 Ge	136344.2	0.83	133876.66	101.8	60 - 125	
72 Ge	950714.8	0.75	993526.00	95.7	60 - 125	
115 In	6538943.0	0.97	6583701.50	99.3	60 - 125	
159 Tb	7841940.5	0.06	7699524.00	101.8	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13019.D\98E13019.D#
Date Acquired: May 26 2016 01:59 pm
Operator: CCapul
Sample Name: IME034SL
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update: May 26 2016 01:12 pm
Sample Type: LCSS
Final Dil Factor: 1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	282860.31	46.77	ppb	0.90	40.00	80 - 120.0	
9 Be	104445.00	50.38	ppb	2.56	40.00	80 - 120.0	Fail
11 B	74171.04	46.61	ppb	3.32	40.00	80 - 120.0	
23 Na	16594950.00	4038.00	ppb	1.51	4000.00	80 - 120.0	
24 Mg	57533088.00	4103.00	ppb	3.38	4000.00	80 - 120.0	
27 Al	78602800.00	4137.00	ppb	2.17	4000.00	80 - 120.0	
28 Si	5068.95	2.84	ppb	4.29	4000.00	80 - 120.0	Fail
31 P	27394.28	6.61	ppb	11.22	400.00	80 - 120.0	Fail
39 K	1942193.00	4244.00	ppb	1.17	4000.00	80 - 120.0	
40 Ca	37901072.00	4242.00	ppb	1.46	4000.00	80 - 120.0	
47 Ti	108589.90	42.24	ppb	1.02	40.00	80 - 120.0	
51 V	235448.20	41.74	ppb	1.67	40.00	80 - 120.0	
52 Cr	294053.00	43.13	ppb	1.31	40.00	80 - 120.0	
55 Mn	1953801.00	46.22	ppb	1.62	40.00	80 - 120.0	
56 Fe	87026520.00	4241.00	ppb	1.14	4000.00	80 - 120.0	
59 Co	1534431.00	45.49	ppb	0.90	40.00	80 - 120.0	
60 Ni	136143.80	44.43	ppb	1.88	40.00	80 - 120.0	
63 Cu	355217.50	44.20	ppb	1.48	40.00	80 - 120.0	
66 Zn	420629.09	81.34	ppb	0.48	80.00	80 - 120.0	
75 As	35769.31	41.19	ppb	1.43	40.00	80 - 120.0	
78 Se	33700.01	42.71	ppb	0.86	40.00	80 - 120.0	
88 Sr	2391021.00	44.63	ppb	0.67	40.00	80 - 120.0	
90 Zr	5122.36	0.10	ppb	4.58	30.00	80 - 120.0	Fail
95 Mo	433845.00	40.40	ppb	0.48	40.00	80 - 120.0	
107 Ag	1086951.00	41.02	ppb	0.74	40.00	80 - 120.0	
111 Cd	232717.09	41.03	ppb	0.74	40.00	80 - 120.0	
118 Sn	720798.63	44.74	ppb	1.29	40.00	80 - 120.0	
121 Sb	842874.38	40.23	ppb	1.41	40.00	80 - 120.0	
137 Ba	319275.00	41.35	ppb	1.00	40.00	80 - 120.0	
182 W	533.37	0.03	ppb	8.29	40.00	80 - 120.0	Fail
205 Tl	1509918.00	43.85	ppb	2.59	40.00	80 - 120.0	
208 Pb	2064241.00	40.87	ppb	2.61	40.00	80 - 120.0	
235 U	15365.31	0.29	ppb	3.48	0.28	80 - 120.0	
238 U	2093052.00	44.28	ppb	2.66	40.00	80 - 120.0	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	501152.03	2.20	855442.00	58.6	60 - 125	ISFail
45 Sc	2026132.90	2.72	1984276.00	102.1	60 - 125	
45 Sc	202019.36	1.87	203946.81	99.1	60 - 125	
45 Sc	3895437.50	1.05	4465365.00	87.2	60 - 125	
72 Ge	582689.31	1.76	585533.19	99.5	60 - 125	
72 Ge	134994.72	1.14	133876.66	100.8	60 - 125	
72 Ge	939748.00	0.45	993526.00	94.6	60 - 125	
115 In	6418909.50	0.43	6583701.50	97.5	60 - 125	
159 Tb	7831430.00	2.76	7699524.00	101.7	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13020.D\98E13020.D#
Date Acquired:	May 26 2016 02:03 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-01
Misc Info:	
Vial Number:	2103
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	129543.2	0.0000	23.4500	ppb	2.13	50.00	
9 Be	# 3	6	2345.9	0.0000	1.3680	ppb	7.42	50.00	
11 B	# 3	6	13761.3	0.0000	10.2800	ppb	5.23	100.00	
23 Na	# 1	45	389303.9	0.0000	62.3500	ppb	2.55	50000.00	
24 Mg	# 3	45	54648592.0	0.0000	4211.0000	ppb	2.20	50000.00	
27 Al	# 3	45	375817980.0	0.0000	21380.0000	ppb	2.57	50000.00	
28 Si	# 1	45	3477693.0	0.0000	3030.0000	ppb	1.97	10000.00	
31 P	# 3	45	591064.7	0.0000	560.4000	ppb	6.89	400000.00	
39 K	# 2	45	1816896.0	0.0000	4124.0000	ppb	1.39	50000.00	
40 Ca	# 1	45	493832000.0	0.0000	54880.0000	ppb	1.93	50000.00	>LRS
47 Ti	# 3	45	798403.1	0.0000	335.7000	ppb	0.98	500.00	
51 V	# 2	45	225397.4	0.0000	41.5100	ppb	0.80	500.00	
52 Cr	# 2	45	319056.5	0.0000	48.6300	ppb	0.67	500.00	
55 Mn	# 3	45	12744300.0	0.0000	326.0000	ppb	0.16	3000.00	
56 Fe	# 1	45	424901410.0	0.0000	20550.0000	ppb	1.21	50000.00	
59 Co	# 3	45	267310.9	0.0000	8.5510	ppb	1.29	500.00	
60 Ni	# 2	45	60045.8	0.0000	20.2500	ppb	1.00	500.00	
63 Cu	# 2	45	280340.0	0.0000	36.2300	ppb	0.87	500.00	
66 Zn	# 3	72	1184969.0	0.0000	248.8000	ppb	0.56	500.00	
75 As	# 2	72	5000.3	0.0000	5.9770	ppb	0.79	500.00	
78 Se	# 1	72	515.3	0.0000	0.6710	ppb	8.52	500.00	
88 Sr	# 3	72	4477470.0	0.0000	90.5700	ppb	1.37	500.00	
90 Zr	# 3	72	211352.5	0.0000	5.1450	ppb	1.34	1000.00	
95 Mo	# 3	115	23853.0	0.0000	2.4140	ppb	1.30	500.00	
107 Ag	# 3	115	7168.0	0.0000	0.2929	ppb	2.12	50.00	
111 Cd	# 3	115	27794.6	0.0000	5.3370	ppb	1.14	500.00	
118 Sn	# 3	115	85699.8	0.0000	5.7890	ppb	2.39	500.00	
121 Sb	# 3	115	16188.1	0.0000	0.8190	ppb	2.70	500.00	
137 Ba	# 3	115	2831548.0	0.0000	399.5000	ppb	2.73	1000.00	
182 W	# 3	159	5562.7	0.0000	0.3780	ppb	2.85	1000.00	
205 Tl	# 3	159	9810.2	0.0000	0.2938	ppb	3.93	500.00	
208 Pb	# 3	159	6407353.0	0.0000	134.3000	ppb	3.24	500.00	
235 U	# 3	159	342.2	0.0000	0.0067	ppb	22.86	5.00	
238 U	# 3	159	43309.9	0.0000	0.9690	ppb	3.62	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	410954.88	6.65	855442.00	48.0	60 - 125	ISFail
45 Sc	# 1	2041936.60	0.97	1984276.00	102.9	60 - 125	
45 Sc	# 2	194418.25	0.91	203946.81	95.3	60 - 125	
45 Sc	# 3	3608280.80	7.17	4465365.00	80.8	60 - 125	
72 Ge	# 1	558174.19	0.78	585533.19	95.3	60 - 125	
72 Ge	# 2	129441.20	0.49	133876.66	96.7	60 - 125	
72 Ge	# 3	867033.50	4.25	993526.00	87.3	60 - 125	
115 In	# 3	5887157.50	5.43	6583701.50	89.4	60 - 125	
159 Tb	# 3	7408188.00	8.85	7699524.00	96.2	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13021.D\98E13021.D#
Date Acquired:	May 26 2016 02:08 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-02
Misc Info:	
Vial Number:	2104
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	306430.7	0.0000	50.5900	ppb	4.30	50.00	>LRS
9 Be	# 3	6	6376.2	0.0000	3.0320	ppb	6.43	50.00	
11 B	# 3	6	29302.2	0.0000	18.0200	ppb	5.10	100.00	
23 Na	# 1	45	742529.4	0.0000	138.4000	ppb	2.94	50000.00	
24 Mg	# 3	45	111792500.0	0.0000	7058.0000	ppb	0.65	50000.00	
27 Al	# 3	45	1062515000.0	0.0000	49500.0000	ppb	1.07	50000.00	
28 Si	# 1	45	3494820.0	0.0000	2878.0000	ppb	1.58	10000.00	
31 P	# 3	45	1119853.0	0.0000	877.9000	ppb	1.36	400000.00	
39 K	# 2	45	4452688.0	0.0000	9057.0000	ppb	1.38	50000.00	
40 Ca	# 1	45	302322500.0	0.0000	31750.0000	ppb	0.97	50000.00	
47 Ti	# 3	45	1949229.0	0.0000	671.8000	ppb	1.08	500.00	>LRS
51 V	# 2	45	482225.8	0.0000	79.2000	ppb	0.86	500.00	
52 Cr	# 2	45	343697.2	0.0000	46.6000	ppb	0.96	500.00	
55 Mn	# 3	45	52190200.0	0.0000	1095.0000	ppb	2.00	3000.00	
56 Fe	# 1	45	917820800.0	0.0000	41950.0000	ppb	2.03	50000.00	
59 Co	# 3	45	653474.3	0.0000	17.1400	ppb	1.66	500.00	
60 Ni	# 2	45	126236.1	0.0000	38.0500	ppb	1.63	500.00	
63 Cu	# 2	45	339062.7	0.0000	38.9900	ppb	1.28	500.00	
66 Zn	# 3	72	763258.4	0.0000	149.8000	ppb	1.46	500.00	
75 As	# 2	72	11600.5	0.0000	13.3000	ppb	1.75	500.00	
78 Se	# 1	72	484.9	0.0000	0.6315	ppb	3.21	500.00	
88 Sr	# 3	72	4295073.0	0.0000	81.2600	ppb	0.84	500.00	
90 Zr	# 3	72	541956.3	0.0000	12.3700	ppb	0.89	1000.00	
95 Mo	# 3	115	9904.3	0.0000	0.9652	ppb	1.72	500.00	
107 Ag	# 3	115	6636.5	0.0000	0.2624	ppb	2.44	50.00	
111 Cd	# 3	115	24256.2	0.0000	4.5100	ppb	1.57	500.00	
118 Sn	# 3	115	82294.7	0.0000	5.3860	ppb	0.53	500.00	
121 Sb	# 3	115	11094.2	0.0000	0.5363	ppb	2.50	500.00	
137 Ba	# 3	115	3294592.0	0.0000	450.6000	ppb	1.19	1000.00	
182 W	# 3	159	2323.7	0.0000	0.1538	ppb	5.30	1000.00	
205 Tl	# 3	159	21495.0	0.0000	0.6568	ppb	1.08	500.00	
208 Pb	# 3	159	4787172.0	0.0000	100.9000	ppb	1.48	500.00	
235 U	# 3	159	405.6	0.0000	0.0081	ppb	4.31	5.00	
238 U	# 3	159	54579.1	0.0000	1.2280	ppb	1.40	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	506466.75	2.40	855442.00	59.2	60 - 125	ISFail
45 Sc # 1	2160910.80	2.55	1984276.00	108.9	60 - 125	
45 Sc # 2	218537.28	1.91	203946.81	107.2	60 - 125	
45 Sc # 3	4400023.50	1.25	4465365.00	98.5	60 - 125	
72 Ge # 1	557439.38	1.23	585533.19	95.2	60 - 125	
72 Ge # 2	135326.16	0.78	133876.66	101.1	60 - 125	
72 Ge # 3	927367.06	1.40	993526.00	93.3	60 - 125	
115 In # 3	6079145.50	0.48	6583701.50	92.3	60 - 125	
159 Tb # 3	7351828.00	0.80	7699524.00	95.5	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

2 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13022.D\98E13022.D#
Date Acquired:	May 26 2016 02:12 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-03
Misc Info:	
Vial Number:	2105
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	99271.1	0.0000	18.1700	ppb	2.74	50.00	
9 Be	# 3	6	1793.5	0.0000	1.1180	ppb	9.17	50.00	
11 B	# 3	6	12551.0	0.0000	10.0400	ppb	5.58	100.00	
23 Na	# 1	45	382187.1	0.0000	65.1600	ppb	0.87	50000.00	
24 Mg	# 3	45	52003780.0	0.0000	3975.0000	ppb	3.47	50000.00	
27 Al	# 3	45	301565180.0	0.0000	17010.0000	ppb	1.75	50000.00	
28 Si	# 1	45	3688561.0	0.0000	3371.0000	ppb	1.06	10000.00	
31 P	# 3	45	335485.2	0.0000	306.7000	ppb	1.53	400000.00	
39 K	# 2	45	1667345.0	0.0000	3877.0000	ppb	1.79	50000.00	
40 Ca	# 1	45	795994370.0	0.0000	92780.0000	ppb	2.06	50000.00	>LRS
47 Ti	# 3	45	728529.6	0.0000	304.0000	ppb	1.99	500.00	
51 V	# 2	45	207182.8	0.0000	39.1100	ppb	0.85	500.00	
52 Cr	# 2	45	114063.1	0.0000	17.8000	ppb	0.69	500.00	
55 Mn	# 3	45	15662160.0	0.0000	398.0000	ppb	4.16	3000.00	
56 Fe	# 1	45	342619810.0	0.0000	17380.0000	ppb	0.50	50000.00	
59 Co	# 3	45	218010.9	0.0000	6.9220	ppb	5.15	500.00	
60 Ni	# 2	45	45070.2	0.0000	15.5400	ppb	0.99	500.00	
63 Cu	# 2	45	95001.5	0.0000	12.5300	ppb	0.32	500.00	
66 Zn	# 3	72	229345.2	0.0000	48.7000	ppb	1.62	500.00	
75 As	# 2	72	5046.6	0.0000	6.1980	ppb	1.71	500.00	
78 Se	# 1	72	172.2	0.0000	0.2231	ppb	7.47	500.00	
88 Sr	# 3	72	7134174.0	0.0000	146.6000	ppb	1.37	500.00	
90 Zr	# 3	72	166384.9	0.0000	4.1090	ppb	1.13	1000.00	
95 Mo	# 3	115	6394.1	0.0000	0.6310	ppb	4.38	500.00	
107 Ag	# 3	115	1574.6	0.0000	0.0618	ppb	2.78	50.00	
111 Cd	# 3	115	2536.6	0.0000	0.4744	ppb	7.21	500.00	
118 Sn	# 3	115	55441.1	0.0000	3.6920	ppb	0.91	500.00	
121 Sb	# 3	115	6175.1	0.0000	0.2939	ppb	3.56	500.00	
137 Ba	# 3	115	3141100.0	0.0000	437.5000	ppb	3.00	1000.00	
182 W	# 3	159	2203.6	0.0000	0.1460	ppb	10.04	1000.00	
205 Tl	# 3	159	7675.1	0.0000	0.2303	ppb	3.20	500.00	
208 Pb	# 3	159	663171.2	0.0000	14.0200	ppb	1.84	500.00	
235 U	# 3	159	258.9	0.0000	0.0052	ppb	13.23	5.00	
238 U	# 3	159	32979.6	0.0000	0.7444	ppb	3.73	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	383875.34	3.76	855442.00	44.9	60 - 125	ISFail
45 Sc # 1	1946746.90	0.50	1984276.00	98.1	60 - 125	
45 Sc # 2	189612.30	0.95	203946.81	93.0	60 - 125	
45 Sc # 3	3634910.00	2.23	4465365.00	81.4	60 - 125	
72 Ge # 1	544082.81	0.80	585533.19	92.9	60 - 125	
72 Ge # 2	126022.70	1.25	133876.66	94.1	60 - 125	
72 Ge # 3	854084.44	0.64	993526.00	86.0	60 - 125	
115 In # 3	5971624.50	1.41	6583701.50	90.7	60 - 125	
159 Tb # 3	7328304.00	2.06	7699524.00	95.2	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13023.D\98E13023.D#
Date Acquired:	May 26 2016 02:17 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-04
Misc Info:	
Vial Number:	2106
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	102826.1	0.0000	17.3300	ppb	9.17	50.00	
9 Be	# 3	6	1748.0	0.0000	1.0110	ppb	3.58	50.00	
11 B	# 3	6	11465.5	0.0000	8.4930	ppb	8.15	100.00	
23 Na	# 1	45	368844.6	0.0000	61.4200	ppb	1.45	50000.00	
24 Mg	# 3	45	52752648.0	0.0000	3913.0000	ppb	3.24	50000.00	
27 Al	# 3	45	293363390.0	0.0000	16050.0000	ppb	1.54	50000.00	
28 Si	# 1	45	3559751.0	0.0000	3242.0000	ppb	0.71	10000.00	
31 P	# 3	45	382863.0	0.0000	341.6000	ppb	0.98	400000.00	
39 K	# 2	45	1660209.0	0.0000	3733.0000	ppb	0.82	50000.00	
40 Ca	# 1	45	803012670.0	0.0000	93270.0000	ppb	0.53	50000.00	>LRS
47 Ti	# 3	45	693007.4	0.0000	280.6000	ppb	2.95	500.00	
51 V	# 2	45	208902.9	0.0000	38.1600	ppb	0.49	500.00	
52 Cr	# 2	45	120268.2	0.0000	18.1600	ppb	0.44	500.00	
55 Mn	# 3	45	16656090.0	0.0000	410.6000	ppb	4.07	3000.00	
56 Fe	# 1	45	359991390.0	0.0000	18190.0000	ppb	0.05	50000.00	
59 Co	# 3	45	227114.5	0.0000	6.9940	ppb	2.94	500.00	
60 Ni	# 2	45	47694.6	0.0000	15.9200	ppb	0.56	500.00	
63 Cu	# 2	45	103914.3	0.0000	13.2700	ppb	0.96	500.00	
66 Zn	# 3	72	234823.0	0.0000	48.6600	ppb	1.77	500.00	
75 As	# 2	72	5788.0	0.0000	6.9870	ppb	2.81	500.00	
78 Se	# 1	72	189.8	0.0000	0.2453	ppb	10.49	500.00	
88 Sr	# 3	72	7474144.0	0.0000	149.8000	ppb	1.58	500.00	
90 Zr	# 3	72	180342.1	0.0000	4.3480	ppb	2.73	1000.00	
95 Mo	# 3	115	6661.1	0.0000	0.6475	ppb	5.13	500.00	
107 Ag	# 3	115	1602.4	0.0000	0.0619	ppb	6.28	50.00	
111 Cd	# 3	115	2575.4	0.0000	0.4740	ppb	3.86	500.00	
118 Sn	# 3	115	55601.3	0.0000	3.6440	ppb	1.60	500.00	
121 Sb	# 3	115	6033.9	0.0000	0.2818	ppb	3.21	500.00	
137 Ba	# 3	115	3452331.0	0.0000	473.1000	ppb	2.17	1000.00	
182 W	# 3	159	2433.7	0.0000	0.1617	ppb	2.87	1000.00	
205 Tl	# 3	159	7532.8	0.0000	0.2255	ppb	7.06	500.00	
208 Pb	# 3	159	705898.2	0.0000	14.8900	ppb	2.43	500.00	
235 U	# 3	159	268.9	0.0000	0.0054	ppb	4.93	5.00	
238 U	# 3	159	36101.7	0.0000	0.8133	ppb	5.44	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	412362.78	4.41	855442.00	48.2	60 - 125	ISFail
45 Sc # 1	1953655.10	1.10	1984276.00	98.5	60 - 125	
45 Sc # 2	195942.38	0.92	203946.81	96.1	60 - 125	
45 Sc # 3	3746984.50	2.70	4465365.00	83.9	60 - 125	
72 Ge # 1	547147.06	1.23	585533.19	93.4	60 - 125	
72 Ge # 2	128295.90	0.91	133876.66	95.8	60 - 125	
72 Ge # 3	875579.56	3.17	993526.00	88.1	60 - 125	
115 In # 3	6067037.00	0.60	6583701.50	92.2	60 - 125	
159 Tb # 3	7344851.50	1.97	7699524.00	95.4	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13024.D\98E13024.D#
Date Acquired:	May 26 2016 02:21 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-05
Misc Info:	
Vial Number:	2107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	114377.0	0.0000	21.0600	ppb	1.83	50.00	
9 Be	# 3	6	2277.0	0.0000	1.3800	ppb	3.89	50.00	
11 B	# 3	6	13672.2	0.0000	10.6400	ppb	1.18	100.00	
23 Na	# 1	45	378039.5	0.0000	62.5600	ppb	1.75	50000.00	
24 Mg	# 3	45	55983260.0	0.0000	4178.0000	ppb	4.06	50000.00	
27 Al	# 3	45	361152190.0	0.0000	19890.0000	ppb	4.62	50000.00	
28 Si	# 1	45	3414086.0	0.0000	3070.0000	ppb	0.33	10000.00	
31 P	# 3	45	440430.6	0.0000	398.4000	ppb	3.07	400000.00	
39 K	# 2	45	2318017.0	0.0000	5145.0000	ppb	1.07	50000.00	
40 Ca	# 1	45	675523580.0	0.0000	77470.0000	ppb	0.66	50000.00	>LRS
47 Ti	# 3	45	772645.2	0.0000	314.7000	ppb	1.53	500.00	
51 V	# 2	45	225924.1	0.0000	40.5800	ppb	1.10	500.00	
52 Cr	# 2	45	145517.2	0.0000	21.6100	ppb	0.79	500.00	
55 Mn	# 3	45	15788160.0	0.0000	391.4000	ppb	0.55	3000.00	
56 Fe	# 1	45	395649500.0	0.0000	19740.0000	ppb	1.13	50000.00	
59 Co	# 3	45	264108.6	0.0000	8.1820	ppb	0.80	500.00	
60 Ni	# 2	45	53261.2	0.0000	17.4900	ppb	0.72	500.00	
63 Cu	# 2	45	120047.4	0.0000	15.0800	ppb	1.11	500.00	
66 Zn	# 3	72	259544.0	0.0000	53.4400	ppb	1.50	500.00	
75 As	# 2	72	5458.5	0.0000	6.4610	ppb	2.23	500.00	
78 Se	# 1	72	215.1	0.0000	0.2775	ppb	9.77	500.00	
88 Sr	# 3	72	6148394.0	0.0000	122.4000	ppb	0.32	500.00	
90 Zr	# 3	72	220465.0	0.0000	5.2820	ppb	1.33	1000.00	
95 Mo	# 3	115	6515.3	0.0000	0.6363	ppb	2.83	500.00	
107 Ag	# 3	115	2112.5	0.0000	0.0827	ppb	2.36	50.00	
111 Cd	# 3	115	3187.7	0.0000	0.5913	ppb	2.83	500.00	
118 Sn	# 3	115	57572.9	0.0000	3.7930	ppb	0.81	500.00	
121 Sb	# 3	115	6702.1	0.0000	0.3173	ppb	4.62	500.00	
137 Ba	# 3	115	2247061.0	0.0000	309.5000	ppb	0.36	1000.00	
182 W	# 3	159	2066.9	0.0000	0.1347	ppb	8.46	1000.00	
205 Tl	# 3	159	9400.8	0.0000	0.2808	ppb	1.31	500.00	
208 Pb	# 3	159	851607.4	0.0000	17.8200	ppb	0.23	500.00	
235 U	# 3	159	225.6	0.0000	0.0045	ppb	4.47	5.00	
238 U	# 3	159	29912.3	0.0000	0.6680	ppb	3.17	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	394831.13	0.49	855442.00	46.2	60 - 125	ISFail
45 Sc	# 1	1978593.50	1.81	1984276.00	99.7	60 - 125	
45 Sc	# 2	199344.45	1.88	203946.81	97.7	60 - 125	
45 Sc	# 3	3723822.80	2.01	4465365.00	83.4	60 - 125	
72 Ge	# 1	551289.81	0.67	585533.19	94.2	60 - 125	
72 Ge	# 2	130765.02	1.79	133876.66	97.7	60 - 125	
72 Ge	# 3	881370.06	0.69	993526.00	88.7	60 - 125	
115 In	# 3	6036178.00	0.97	6583701.50	91.7	60 - 125	
159 Tb	# 3	7403791.50	1.33	7699524.00	96.2	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13025.D\98E13025.D#
Date Acquired:	May 26 2016 02:26 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-06M
Misc Info:	
Vial Number:	2108
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	309470.3	0.0000	69.5100	ppb	0.88	50.00	>LRS
9 Be	# 3	6	86165.9	0.0000	54.3300	ppb	0.76	50.00	>LRS
11 B	# 3	6	70180.0	0.0000	57.7300	ppb	1.16	100.00	
23 Na	# 1	45	15410230.0	0.0000	3876.0000	ppb	3.35	50000.00	
24 Mg	# 3	45	105608700.0	0.0000	7897.0000	ppb	2.53	50000.00	
27 Al	# 3	45	508764190.0	0.0000	28080.0000	ppb	3.57	50000.00	
28 Si	# 1	45	4416584.0	0.0000	4011.0000	ppb	2.88	10000.00	
31 P	# 3	45	418017.7	0.0000	377.9000	ppb	1.50	400000.00	
39 K	# 2	45	3851865.0	0.0000	8680.0000	ppb	0.07	50000.00	
40 Ca	# 1	45	739369600.0	0.0000	85620.0000	ppb	2.92	50000.00	>LRS
47 Ti	# 3	45	944431.3	0.0000	385.4000	ppb	0.69	500.00	
51 V	# 2	45	426673.9	0.0000	77.6400	ppb	0.67	500.00	
52 Cr	# 2	45	414065.1	0.0000	62.2200	ppb	0.75	500.00	
55 Mn	# 3	45	18190450.0	0.0000	451.9000	ppb	1.45	3000.00	
56 Fe	# 1	45	468458820.0	0.0000	23600.0000	ppb	1.35	50000.00	
59 Co	# 3	45	1609957.0	0.0000	50.0300	ppb	1.32	500.00	
60 Ni	# 2	45	173060.1	0.0000	57.9000	ppb	1.05	500.00	
63 Cu	# 2	45	422511.0	0.0000	53.8700	ppb	0.59	500.00	
66 Zn	# 3	72	606139.2	0.0000	127.2000	ppb	0.54	500.00	
75 As	# 2	72	37467.5	0.0000	45.8000	ppb	1.30	500.00	
78 Se	# 1	72	30436.2	0.0000	41.3700	ppb	1.62	500.00	
88 Sr	# 3	72	7068175.0	0.0000	143.0000	ppb	1.42	500.00	
90 Zr	# 3	72	183476.4	0.0000	4.4650	ppb	1.26	1000.00	
95 Mo	# 3	115	381191.9	0.0000	38.4100	ppb	1.15	500.00	
107 Ag	# 3	115	951021.9	0.0000	38.8300	ppb	1.87	50.00	
111 Cd	# 3	115	208772.6	0.0000	39.8200	ppb	1.01	500.00	
118 Sn	# 3	115	660160.2	0.0000	44.3400	ppb	0.66	500.00	
121 Sb	# 3	115	445822.5	0.0000	23.0100	ppb	0.98	500.00	
137 Ba	# 3	115	2219926.0	0.0000	311.1000	ppb	1.48	1000.00	
182 W	# 3	159	2413.7	0.0000	0.1627	ppb	3.33	1000.00	
205 Tl	# 3	159	1325114.0	0.0000	41.6100	ppb	0.67	500.00	
208 Pb	# 3	159	2433365.0	0.0000	52.1000	ppb	1.29	500.00	
235 U	# 3	159	13904.5	0.0000	0.2843	ppb	0.29	5.00	
238 U	# 3	159	1882534.0	0.0000	43.0700	ppb	0.60	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	383226.00	0.71	855442.00	44.8	60 - 125	ISFail
45 Sc	# 1	1959438.30	1.13	1984276.00	98.7	60 - 125	
45 Sc	# 2	197224.77	1.12	203946.81	96.7	60 - 125	
45 Sc	# 3	3716388.80	1.96	4465365.00	83.2	60 - 125	
72 Ge	# 1	543309.31	1.43	585533.19	92.8	60 - 125	
72 Ge	# 2	127181.55	1.18	133876.66	95.0	60 - 125	
72 Ge	# 3	867176.25	1.21	993526.00	87.3	60 - 125	
115 In	# 3	5933059.00	1.14	6583701.50	90.1	60 - 125	
159 Tb	# 3	7238705.50	0.41	7699524.00	94.0	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

3 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: D:\DATA\I982016\E\I98E13.B\98E13026.D\98E13026.D#
Date Acquired: May 26 2016 02:30 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: E143-06A
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update: May 26 2016 01:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	302129.8	0.0000	65.4000	ppb	0.89	50.00	>LRS
9 Be	# 3	6	90534.7	0.0000	55.3000	ppb	0.80	50.00	>LRS
11 B	# 3	6	74027.8	0.0000	59.0000	ppb	0.52	100.00	
23 Na	# 1	45	15651190.0	0.0000	3857.0000	ppb	1.09	50000.00	
24 Mg	# 3	45	105597300.0	0.0000	7789.0000	ppb	1.26	50000.00	
27 Al	# 3	45	440331490.0	0.0000	23970.0000	ppb	1.89	50000.00	
28 Si	# 1	45	3925767.0	0.0000	3493.0000	ppb	2.18	10000.00	
31 P	# 3	45	422911.5	0.0000	377.2000	ppb	0.57	400000.00	
39 K	# 2	45	3686268.0	0.0000	8224.0000	ppb	0.81	50000.00	
40 Ca	# 1	45	731929410.0	0.0000	83060.0000	ppb	1.85	50000.00	>LRS
47 Ti	# 3	45	866079.6	0.0000	348.7000	ppb	1.34	500.00	
51 V	# 2	45	421504.2	0.0000	75.9800	ppb	1.51	500.00	
52 Cr	# 2	45	406831.2	0.0000	60.5600	ppb	1.20	500.00	
55 Mn	# 3	45	18427040.0	0.0000	451.6000	ppb	1.06	3000.00	
56 Fe	# 1	45	458474590.0	0.0000	22640.0000	ppb	0.50	50000.00	
59 Co	# 3	45	1660321.0	0.0000	50.9000	ppb	1.07	500.00	
60 Ni	# 2	45	172381.1	0.0000	57.1200	ppb	1.75	500.00	
63 Cu	# 2	45	426313.6	0.0000	53.8400	ppb	1.44	500.00	
66 Zn	# 3	72	602618.0	0.0000	124.8000	ppb	0.48	500.00	
75 As	# 2	72	38450.2	0.0000	46.2100	ppb	1.07	500.00	
78 Se	# 1	72	31505.7	0.0000	42.3800	ppb	0.54	500.00	
88 Sr	# 3	72	7235782.0	0.0000	144.6000	ppb	0.31	500.00	
90 Zr	# 3	72	141031.1	0.0000	3.3850	ppb	0.39	1000.00	
95 Mo	# 3	115	406959.5	0.0000	40.6100	ppb	1.17	500.00	
107 Ag	# 3	115	989386.3	0.0000	40.0100	ppb	0.73	50.00	
111 Cd	# 3	115	211203.9	0.0000	39.9000	ppb	0.43	500.00	
118 Sn	# 3	115	669112.4	0.0000	44.5100	ppb	0.86	500.00	
121 Sb	# 3	115	781820.5	0.0000	39.9800	ppb	0.14	500.00	
137 Ba	# 3	115	2180951.0	0.0000	302.7000	ppb	0.10	1000.00	
182 W	# 3	159	1965.8	0.0000	0.1317	ppb	4.02	1000.00	
205 Tl	# 3	159	1374540.0	0.0000	43.4400	ppb	0.57	500.00	
208 Pb	# 3	159	2451418.0	0.0000	52.8200	ppb	1.49	500.00	
235 U	# 3	159	13717.6	0.0000	0.2822	ppb	1.67	5.00	
238 U	# 3	159	1882447.0	0.0000	43.3500	ppb	2.79	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	395607.97	0.21	855442.00	46.2	60 - 125	ISFail
45 Sc # 1	1999523.90	0.55	1984276.00	100.8	60 - 125	
45 Sc # 2	199117.61	1.69	203946.81	97.6	60 - 125	
45 Sc # 3	3766417.50	0.41	4465365.00	84.3	60 - 125	
72 Ge # 1	548936.69	0.56	585533.19	93.7	60 - 125	
72 Ge # 2	129341.98	1.31	133876.66	96.6	60 - 125	
72 Ge # 3	878063.81	0.26	993526.00	88.4	60 - 125	
115 In # 3	5990102.50	0.58	6583701.50	91.0	60 - 125	
159 Tb # 3	7193097.50	1.05	7699524.00	93.4	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

3 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13027.D\98E13027.D#
Date Acquired:	May 26 2016 02:35 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-06
Misc Info:	
Vial Number:	2110
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	108181.9	0.0000	19.5200	ppb	0.37	50.00	
9 Be	# 3	6	2281.4	0.0000	1.3790	ppb	4.48	50.00	
11 B	# 3	6	12606.7	0.0000	9.7550	ppb	2.65	100.00	
23 Na	# 1	45	349239.0	0.0000	52.8400	ppb	2.21	50000.00	
24 Mg	# 3	45	57750060.0	0.0000	4172.0000	ppb	4.68	50000.00	
27 Al	# 3	45	379231620.0	0.0000	20210.0000	ppb	3.51	50000.00	
28 Si	# 1	45	4067424.0	0.0000	3555.0000	ppb	0.91	10000.00	
31 P	# 3	45	433913.8	0.0000	379.0000	ppb	2.56	400000.00	
39 K	# 2	45	1910743.0	0.0000	4153.0000	ppb	0.10	50000.00	
40 Ca	# 1	45	719344000.0	0.0000	80170.0000	ppb	0.65	50000.00	>LRS
47 Ti	# 3	45	773797.3	0.0000	305.0000	ppb	0.53	500.00	
51 V	# 2	45	208630.6	0.0000	36.7700	ppb	0.60	500.00	
52 Cr	# 2	45	143680.5	0.0000	20.9500	ppb	0.52	500.00	
55 Mn	# 3	45	17214910.0	0.0000	413.1000	ppb	0.67	3000.00	
56 Fe	# 1	45	387682820.0	0.0000	18800.0000	ppb	0.79	50000.00	
59 Co	# 3	45	265738.0	0.0000	7.9680	ppb	1.61	500.00	
60 Ni	# 2	45	53579.8	0.0000	17.2800	ppb	0.40	500.00	
63 Cu	# 2	45	122063.7	0.0000	15.0500	ppb	0.39	500.00	
66 Zn	# 3	72	235343.9	0.0000	47.7700	ppb	0.62	500.00	
75 As	# 2	72	5081.0	0.0000	6.0020	ppb	1.31	500.00	
78 Se	# 1	72	234.4	0.0000	0.2960	ppb	2.50	500.00	
88 Sr	# 3	72	5214001.0	0.0000	102.4000	ppb	0.67	500.00	
90 Zr	# 3	72	138496.7	0.0000	3.2660	ppb	0.85	1000.00	
95 Mo	# 3	115	5179.1	0.0000	0.5064	ppb	2.45	500.00	
107 Ag	# 3	115	1703.5	0.0000	0.0666	ppb	0.24	50.00	
111 Cd	# 3	115	2613.8	0.0000	0.4857	ppb	2.78	500.00	
118 Sn	# 3	115	61652.7	0.0000	4.0810	ppb	1.29	500.00	
121 Sb	# 3	115	6575.4	0.0000	0.3125	ppb	2.60	500.00	
137 Ba	# 3	115	1939251.0	0.0000	268.4000	ppb	1.98	1000.00	
182 W	# 3	159	1940.2	0.0000	0.1258	ppb	6.01	1000.00	
205 Tl	# 3	159	9367.5	0.0000	0.2795	ppb	3.04	500.00	
208 Pb	# 3	159	646134.6	0.0000	13.5000	ppb	1.21	500.00	
235 U	# 3	159	242.2	0.0000	0.0048	ppb	6.77	5.00	
238 U	# 3	159	29247.3	0.0000	0.6523	ppb	1.10	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	396008.94	2.09	855442.00	46.3	60 - 125	ISFail
45 Sc # 1	2036108.50	2.07	1984276.00	102.6	60 - 125	
45 Sc # 2	203024.36	0.44	203946.81	99.5	60 - 125	
45 Sc # 3	3847142.80	1.65	4465365.00	86.2	60 - 125	
72 Ge # 1	564385.75	1.39	585533.19	96.4	60 - 125	
72 Ge # 2	131006.02	0.82	133876.66	97.9	60 - 125	
72 Ge # 3	893411.94	0.40	993526.00	89.9	60 - 125	
115 In # 3	6008581.00	2.18	6583701.50	91.3	60 - 125	
159 Tb # 3	7411432.50	0.14	7699524.00	96.3	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCV QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13028.D\98E13028.D#
Date Acquired:	May 26 2016 02:39 pm
Operator:	CCapul
Sample Name:	CCV2
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update:	May 26 2016 01:12 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element	Conc.	CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.15 ppb	191526.50	2.27	25.00	90 - 110	
9 Be	27.81 ppb	64076.30	2.83	25.00	90 - 110	Fail
11 B	52.76 ppb	93225.10	2.74	50.00	90 - 110	
23 Na	23820.00 ppb	95718480.00	0.95	25000.00	90 - 110	
24 Mg	23670.00 ppb	340758500.00	3.31	25000.00	90 - 110	
27 Al	24190.00 ppb	471972000.00	2.41	25000.00	90 - 110	
28 Si	2455.00 ppb	2751943.00	0.33	2500.00	90 - 110	
31 P	242.80 ppb	296470.69	2.08	250.00	90 - 110	
39 K	25160.00 ppb	11230610.00	0.70	25000.00	90 - 110	
40 Ca	24830.00 ppb	218165900.00	0.33	25000.00	90 - 110	
47 Ti	248.30 ppb	655119.88	1.78	250.00	90 - 110	
51 V	252.60 ppb	1400017.00	0.23	250.00	90 - 110	
52 Cr	248.40 ppb	1669292.00	0.20	250.00	90 - 110	
55 Mn	1542.00 ppb	66801528.00	1.89	1500.00	90 - 110	
56 Fe	24770.00 ppb	500280290.00	0.89	25000.00	90 - 110	
59 Co	249.30 ppb	8634626.00	1.50	250.00	90 - 110	
60 Ni	248.40 ppb	748267.81	1.32	250.00	90 - 110	
63 Cu	249.50 ppb	1974580.00	1.27	250.00	90 - 110	
66 Zn	243.50 ppb	1205656.00	0.70	250.00	90 - 110	
75 As	250.70 ppb	208432.91	0.28	250.00	90 - 110	
78 Se	256.60 ppb	192953.80	0.83	250.00	90 - 110	
88 Sr	252.30 ppb	12962750.00	0.62	250.00	90 - 110	
90 Zr	20.63 ppb	877984.31	1.95	25.00	90 - 110	Fail
95 Mo	256.40 ppb	2497043.00	1.78	250.00	90 - 110	
107 Ag	24.28 ppb	583559.88	1.15	25.00	90 - 110	
111 Cd	246.80 ppb	1269584.00	0.69	250.00	90 - 110	
118 Sn	254.40 ppb	3717576.00	0.31	250.00	90 - 110	
121 Sb	243.40 ppb	4623385.00	0.80	250.00	90 - 110	
137 Ba	502.10 ppb	3516336.00	0.72	500.00	90 - 110	
182 W	29.10 ppb	400048.00	1.51	25.00	90 - 110	Fail
205 Tl	248.20 ppb	7716616.00	3.87	250.00	90 - 110	
208 Pb	237.10 ppb	10811730.00	3.15	250.00	90 - 110	
235 U	1.69 ppb	80905.49	0.79	1.80	90 - 110	
238 U	253.40 ppb	10818300.00	0.46	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	556821.69	2.56	855442.00	65.1	60 - 125	
45 Sc	1993883.10	1.67	1984276.00	100.5	60 - 125	
45 Sc	199245.88	0.99	203946.81	97.7	60 - 125	
45 Sc	4000095.80	0.88	4465365.00	89.6	60 - 125	
72 Ge	555393.31	0.92	585533.19	94.9	60 - 125	
72 Ge	129313.76	0.58	133876.66	96.6	60 - 125	
72 Ge	901422.25	1.33	993526.00	90.7	60 - 125	
115 In	5822349.50	0.97	6583701.50	88.4	60 - 125	
159 Tb	7070199.00	0.59	7699524.00	91.8	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

3 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13029.D\98E13029.D#
Date Acquired:	May 26 2016 02:43 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB2
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.7995	ppb	37145.9	11.61	0.20	Fail
9 Be	0.0112	ppb	52.2	22.53	0.10	
11 B	0.5476	ppb	1429.0	9.59	5.00	
23 Na	-4.4450	ppb	110708.3	14.80	40.00	
24 Mg	3.0570	ppb	56719.1	45.93	10.00	
27 Al	5.5930	ppb	110363.3	43.88	20.00	
28 Si	3.4190	ppb	5562.5	9.25	20.00	
31 P	-1.2990	ppb	18796.1	42.13	10.00	
39 K	5.7950	ppb	27931.9	21.40	20.00	
40 Ca	8.6390	ppb	100462.6	26.14	25.00	
47 Ti	0.1075	ppb	385.6	20.26	0.50	
51 V	-0.0002	ppb	1161.2	3657.90	0.50	
52 Cr	0.0127	ppb	345.1	21.29	0.20	
55 Mn	0.1573	ppb	10581.9	40.96	0.20	
56 Fe	6.6040	ppb	136084.8	16.16	10.00	
59 Co	0.0206	ppb	1050.1	35.37	0.20	
60 Ni	-0.0252	ppb	506.7	28.22	0.20	
63 Cu	0.0185	ppb	863.1	15.25	0.40	
66 Zn	0.0224	ppb	1350.1	90.33	2.00	
75 As	0.0314	ppb	54.2	16.47	0.20	
78 Se	0.0476	ppb	46.4	15.92	0.20	
88 Sr	0.0330	ppb	2517.1	41.71	0.20	
90 Zr	-0.0020	ppb	785.6	42.49	2.00	
95 Mo	0.1566	ppb	1779.1	19.12	0.40	
107 Ag	0.0036	ppb	150.0	64.92	0.20	
111 Cd	0.0205	ppb	153.4	81.10	0.20	
118 Sn	0.1093	ppb	1894.7	10.13	0.20	
121 Sb	0.3344	ppb	7491.5	8.12	0.40	
137 Ba	0.0742	ppb	641.2	39.14	0.20	
182 W	0.0216	ppb	442.2	4.28	1.00	
205 Tl	0.0307	ppb	1267.9	31.90	0.20	
208 Pb	0.0264	ppb	2020.2	39.09	0.10	
235 U	0.0004	ppb	23.3	84.77	1.00	
238 U	0.0421	ppb	1952.5	20.64	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	508425.4	0.60	855442.00	59.4	60 - 125	ISFail
45 Sc	1968612.5	1.91	1984276.00	99.2	60 - 125	
45 Sc	199733.8	1.04	203946.81	97.9	60 - 125	
45 Sc	3929969.5	1.57	4465365.00	88.0	60 - 125	
72 Ge	588316.4	0.89	585533.19	100.5	60 - 125	
72 Ge	133982.1	0.92	133876.66	100.1	60 - 125	
72 Ge	933242.2	1.66	993526.00	93.9	60 - 125	
115 In	6427388.0	2.20	6583701.50	97.6	60 - 125	
159 Tb	7475762.5	1.00	7699524.00	97.1	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13030.D\98E13030.D#
Date Acquired:	May 26 2016 02:48 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-06J
Misc Info:	
Vial Number:	2111
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	52763.2	0.0000	4.0950	ppb	9.02	50.00	
9 Be	# 3	6	551.1	0.0000	0.2609	ppb	17.51	50.00	
11 B	# 3	6	3659.6	0.0000	2.0400	ppb	7.22	100.00	
23 Na	# 1	45	186356.4	0.0000	13.9900	ppb	0.30	50000.00	
24 Mg	# 3	45	12706040.0	0.0000	907.8000	ppb	0.87	50000.00	
27 Al	# 3	45	83405528.0	0.0000	4402.0000	ppb	2.21	50000.00	
28 Si	# 1	45	852649.9	0.0000	758.7000	ppb	1.38	10000.00	
31 P	# 3	45	109727.6	0.0000	81.3000	ppb	2.01	400000.00	
39 K	# 2	45	417249.2	0.0000	868.5000	ppb	1.03	50000.00	
40 Ca	# 1	45	146789900.0	0.0000	16680.0000	ppb	0.46	50000.00	
47 Ti	# 3	45	160123.4	0.0000	62.4700	ppb	0.44	500.00	
51 V	# 2	45	43700.9	0.0000	7.5860	ppb	0.77	500.00	
52 Cr	# 2	45	30020.8	0.0000	4.3750	ppb	1.18	500.00	
55 Mn	# 3	45	3592700.0	0.0000	85.3000	ppb	1.59	3000.00	
56 Fe	# 1	45	80522176.0	0.0000	3982.0000	ppb	1.07	50000.00	
59 Co	# 3	45	56693.2	0.0000	1.6750	ppb	1.82	500.00	
60 Ni	# 2	45	11872.4	0.0000	3.7030	ppb	0.92	500.00	
63 Cu	# 2	45	31159.9	0.0000	3.8000	ppb	1.14	500.00	
66 Zn	# 3	72	56710.5	0.0000	10.9900	ppb	0.92	500.00	
75 As	# 2	72	1137.4	0.0000	1.2720	ppb	1.92	500.00	
78 Se	# 1	72	62.9	0.0000	0.0694	ppb	10.84	500.00	
88 Sr	# 3	72	1082098.0	0.0000	20.6200	ppb	0.76	500.00	
90 Zr	# 3	72	28325.5	0.0000	0.6327	ppb	2.34	1000.00	
95 Mo	# 3	115	1554.6	0.0000	0.1389	ppb	14.82	500.00	
107 Ag	# 3	115	475.6	0.0000	0.0163	ppb	9.53	50.00	
111 Cd	# 3	115	648.6	0.0000	0.1104	ppb	7.90	500.00	
118 Sn	# 3	115	13607.0	0.0000	0.8558	ppb	2.32	500.00	
121 Sb	# 3	115	4274.3	0.0000	0.1856	ppb	4.70	500.00	
137 Ba	# 3	115	397190.2	0.0000	52.6300	ppb	2.12	1000.00	
182 W	# 3	159	604.5	0.0000	0.0333	ppb	12.01	1000.00	
205 Tl	# 3	159	2632.7	0.0000	0.0733	ppb	7.01	500.00	
208 Pb	# 3	159	142094.1	0.0000	2.9720	ppb	0.50	500.00	
235 U	# 3	159	66.7	0.0000	0.0013	ppb	9.67	5.00	
238 U	# 3	159	7137.1	0.0000	0.1590	ppb	4.38	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	487802.19	5.10	855442.00	57.0	60 - 125	ISFail
45 Sc # 1	1996177.00	0.61	1984276.00	100.6	60 - 125	
45 Sc # 2	201722.13	0.93	203946.81	98.9	60 - 125	
45 Sc # 3	3884853.30	0.57	4465365.00	87.0	60 - 125	
72 Ge # 1	579576.75	0.19	585533.19	99.0	60 - 125	
72 Ge # 2	135716.28	1.18	133876.66	101.4	60 - 125	
72 Ge # 3	920330.69	1.76	993526.00	92.6	60 - 125	
115 In # 3	6274622.00	1.40	6583701.50	95.3	60 - 125	
159 Tb # 3	7373243.00	0.97	7699524.00	95.8	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13031.D\98E13031.D#
Date Acquired:	May 26 2016 02:52 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-06D
Misc Info:	
Vial Number:	2112
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	115150.2	0.0000	19.7500	ppb	0.29	50.00	
9 Be	# 3	6	2361.4	0.0000	1.3540	ppb	4.81	50.00	
11 B	# 3	6	13304.1	0.0000	9.7760	ppb	7.01	100.00	
23 Na	# 1	45	376301.0	0.0000	60.3200	ppb	2.17	50000.00	
24 Mg	# 3	45	57799520.0	0.0000	4219.0000	ppb	2.32	50000.00	
27 Al	# 3	45	383409890.0	0.0000	20660.0000	ppb	2.64	50000.00	
28 Si	# 1	45	3996377.0	0.0000	3525.0000	ppb	0.86	10000.00	
31 P	# 3	45	425161.3	0.0000	375.2000	ppb	1.28	400000.00	
39 K	# 2	45	1919047.0	0.0000	4191.0000	ppb	1.13	50000.00	
40 Ca	# 1	45	769975420.0	0.0000	86620.0000	ppb	0.63	50000.00	>LRS
47 Ti	# 3	45	787248.1	0.0000	313.6000	ppb	0.83	500.00	
51 V	# 2	45	205942.8	0.0000	36.4600	ppb	1.03	500.00	
52 Cr	# 2	45	141669.2	0.0000	20.7500	ppb	0.88	500.00	
55 Mn	# 3	45	16480420.0	0.0000	399.7000	ppb	1.37	3000.00	
56 Fe	# 1	45	385116700.0	0.0000	18850.0000	ppb	1.82	50000.00	
59 Co	# 3	45	259592.6	0.0000	7.8680	ppb	2.22	500.00	
60 Ni	# 2	45	52094.6	0.0000	16.8700	ppb	1.69	500.00	
63 Cu	# 2	45	115047.1	0.0000	14.2500	ppb	1.04	500.00	
66 Zn	# 3	72	239590.4	0.0000	50.4300	ppb	1.18	500.00	
75 As	# 2	72	4970.3	0.0000	5.9480	ppb	0.61	500.00	
78 Se	# 1	72	219.3	0.0000	0.2805	ppb	5.39	500.00	
88 Sr	# 3	72	5162878.0	0.0000	105.1000	ppb	1.73	500.00	
90 Zr	# 3	72	133607.3	0.0000	3.2660	ppb	2.44	1000.00	
95 Mo	# 3	115	5313.6	0.0000	0.5279	ppb	0.75	500.00	
107 Ag	# 3	115	1784.6	0.0000	0.0710	ppb	7.42	50.00	
111 Cd	# 3	115	2605.5	0.0000	0.4918	ppb	4.91	500.00	
118 Sn	# 3	115	58384.3	0.0000	3.9240	ppb	0.49	500.00	
121 Sb	# 3	115	6977.8	0.0000	0.3385	ppb	3.06	500.00	
137 Ba	# 3	115	1989591.0	0.0000	279.6000	ppb	0.72	1000.00	
182 W	# 3	159	1831.3	0.0000	0.1207	ppb	5.05	1000.00	
205 Tl	# 3	159	8770.3	0.0000	0.2662	ppb	3.46	500.00	
208 Pb	# 3	159	690981.6	0.0000	14.7100	ppb	1.12	500.00	
235 U	# 3	159	231.1	0.0000	0.0047	ppb	20.82	5.00	
238 U	# 3	159	28680.2	0.0000	0.6517	ppb	2.96	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	417733.78	4.43	855442.00	48.8	60 - 125	ISFail
45 Sc	# 1	2017214.50	2.19	1984276.00	101.7	60 - 125	
45 Sc	# 2	202088.25	1.40	203946.81	99.1	60 - 125	
45 Sc	# 3	3806002.80	1.24	4465365.00	85.2	60 - 125	
72 Ge	# 1	555997.13	1.11	585533.19	95.0	60 - 125	
72 Ge	# 2	129295.35	0.37	133876.66	96.6	60 - 125	
72 Ge	# 3	861934.38	1.49	993526.00	86.8	60 - 125	
115 In	# 3	5916493.50	0.62	6583701.50	89.9	60 - 125	
159 Tb	# 3	7276056.50	1.39	7699524.00	94.5	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13032.D\98E13032.D#
Date Acquired:	May 26 2016 02:57 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-07
Misc Info:	
Vial Number:	2201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	250732.4	0.0000	33.4700	ppb	4.63	50.00	
9 Be	# 3	6	5912.7	0.0000	2.3930	ppb	3.29	50.00	
11 B	# 3	6	22973.6	0.0000	11.9400	ppb	6.83	100.00	
23 Na	# 1	45	414326.1	0.0000	63.9900	ppb	0.80	50000.00	
24 Mg	# 3	45	96094280.0	0.0000	5922.0000	ppb	3.08	50000.00	
27 Al	# 3	45	914162110.0	0.0000	41570.0000	ppb	3.31	50000.00	
28 Si	# 1	45	3378672.0	0.0000	2814.0000	ppb	1.73	10000.00	
31 P	# 3	45	1323247.0	0.0000	1015.0000	ppb	1.35	400000.00	
39 K	# 2	45	3833642.0	0.0000	7666.0000	ppb	0.05	50000.00	
40 Ca	# 1	45	81876120.0	0.0000	8695.0000	ppb	1.14	50000.00	
47 Ti	# 3	45	1542988.0	0.0000	519.1000	ppb	2.11	500.00	>LRS
51 V	# 2	45	373199.7	0.0000	60.2800	ppb	1.15	500.00	
52 Cr	# 2	45	311257.3	0.0000	41.5300	ppb	0.64	500.00	
55 Mn	# 3	45	22090490.0	0.0000	452.3000	ppb	1.48	3000.00	
56 Fe	# 1	45	745885700.0	0.0000	34480.0000	ppb	1.25	50000.00	
59 Co	# 3	45	469041.2	0.0000	12.0100	ppb	2.18	500.00	
60 Ni	# 2	45	93424.0	0.0000	27.6600	ppb	1.73	500.00	
63 Cu	# 2	45	282632.5	0.0000	31.9700	ppb	0.98	500.00	
66 Zn	# 3	72	937895.1	0.0000	180.8000	ppb	2.45	500.00	
75 As	# 2	72	7022.0	0.0000	7.8900	ppb	0.92	500.00	
78 Se	# 1	72	488.5	0.0000	0.6295	ppb	3.81	500.00	
88 Sr	# 3	72	1998987.0	0.0000	37.1200	ppb	0.80	500.00	
90 Zr	# 3	72	336729.8	0.0000	7.5370	ppb	1.29	1000.00	
95 Mo	# 3	115	9154.8	0.0000	0.8935	ppb	1.81	500.00	
107 Ag	# 3	115	5766.0	0.0000	0.2282	ppb	3.16	50.00	
111 Cd	# 3	115	11917.8	0.0000	2.2180	ppb	3.34	500.00	
118 Sn	# 3	115	77155.5	0.0000	5.0610	ppb	0.97	500.00	
121 Sb	# 3	115	10780.6	0.0000	0.5217	ppb	1.20	500.00	
137 Ba	# 3	115	2075872.0	0.0000	284.6000	ppb	1.58	1000.00	
182 W	# 3	159	5315.9	0.0000	0.3606	ppb	3.23	1000.00	
205 Tl	# 3	159	15967.1	0.0000	0.4826	ppb	2.70	500.00	
208 Pb	# 3	159	3190546.0	0.0000	66.8100	ppb	1.12	500.00	
235 U	# 3	159	488.9	0.0000	0.0097	ppb	10.56	5.00	
238 U	# 3	159	63286.6	0.0000	1.4150	ppb	4.05	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	594364.38	5.19	855442.00	69.5	60 - 125	
45 Sc # 1	2135980.80	1.10	1984276.00	107.6	60 - 125	
45 Sc # 2	222046.73	1.66	203946.81	108.9	60 - 125	
45 Sc # 3	4508608.50	1.25	4465365.00	101.0	60 - 125	
72 Ge # 1	563562.44	1.19	585533.19	96.2	60 - 125	
72 Ge # 2	137880.78	0.99	133876.66	103.0	60 - 125	
72 Ge # 3	944636.00	1.99	993526.00	95.1	60 - 125	
115 In # 3	6065765.50	0.93	6583701.50	92.1	60 - 125	
159 Tb # 3	7401716.50	0.78	7699524.00	96.1	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13033.D\98E13033.D#
Date Acquired:	May 26 2016 03:01 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-08
Misc Info:	
Vial Number:	2202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	95504.9	0.0000	15.5600	ppb	3.96	50.00	
9 Be	# 3	6	1755.7	0.0000	1.0140	ppb	8.98	50.00	
11 B	# 3	6	10552.5	0.0000	7.7640	ppb	10.15	100.00	
23 Na	# 1	45	309892.3	0.0000	46.0900	ppb	2.16	50000.00	
24 Mg	# 3	45	43521740.0	0.0000	3241.0000	ppb	1.70	50000.00	
27 Al	# 3	45	297566780.0	0.0000	16360.0000	ppb	0.63	50000.00	
28 Si	# 1	45	4377393.0	0.0000	3970.0000	ppb	1.33	10000.00	
31 P	# 3	45	359421.2	0.0000	321.1000	ppb	0.82	400000.00	
39 K	# 2	45	1465316.0	0.0000	3340.0000	ppb	0.85	50000.00	
40 Ca	# 1	45	1080214000.0	0.0000	124900.0000	ppb	1.43	50000.00	>LRS
47 Ti	# 3	45	693672.6	0.0000	282.0000	ppb	0.26	500.00	
51 V	# 2	45	185010.8	0.0000	34.2900	ppb	0.83	500.00	
52 Cr	# 2	45	112160.2	0.0000	17.2000	ppb	0.14	500.00	
55 Mn	# 3	45	11354710.0	0.0000	281.0000	ppb	0.85	3000.00	
56 Fe	# 1	45	304675810.0	0.0000	15330.0000	ppb	1.58	50000.00	
59 Co	# 3	45	218294.9	0.0000	6.7500	ppb	0.97	500.00	
60 Ni	# 2	45	42600.7	0.0000	14.4200	ppb	0.89	500.00	
63 Cu	# 2	45	85893.4	0.0000	11.1200	ppb	0.49	500.00	
66 Zn	# 3	72	191172.1	0.0000	41.4500	ppb	0.62	500.00	
75 As	# 2	72	4678.2	0.0000	5.7700	ppb	1.05	500.00	
78 Se	# 1	72	193.6	0.0000	0.2539	ppb	5.23	500.00	
88 Sr	# 3	72	4757691.0	0.0000	99.8800	ppb	1.01	500.00	
90 Zr	# 3	72	99296.5	0.0000	2.4990	ppb	1.75	1000.00	
95 Mo	# 3	115	4001.9	0.0000	0.3982	ppb	6.71	500.00	
107 Ag	# 3	115	1203.4	0.0000	0.0475	ppb	4.05	50.00	
111 Cd	# 3	115	2292.9	0.0000	0.4347	ppb	4.76	500.00	
118 Sn	# 3	115	53946.8	0.0000	3.6480	ppb	1.18	500.00	
121 Sb	# 3	115	6326.3	0.0000	0.3069	ppb	5.35	500.00	
137 Ba	# 3	115	1604156.0	0.0000	226.9000	ppb	3.54	1000.00	
182 W	# 3	159	1824.7	0.0000	0.1275	ppb	5.05	1000.00	
205 Tl	# 3	159	7479.4	0.0000	0.2390	ppb	2.09	500.00	
208 Pb	# 3	159	622617.1	0.0000	14.0000	ppb	2.17	500.00	
235 U	# 3	159	202.2	0.0000	0.0043	ppb	20.79	5.00	
238 U	# 3	159	25855.7	0.0000	0.6205	ppb	1.60	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	414010.03	5.08	855442.00	48.4	60 - 125	ISFail
45 Sc # 1	1962280.80	1.15	1984276.00	98.9	60 - 125	
45 Sc # 2	192964.95	0.64	203946.81	94.6	60 - 125	
45 Sc # 3	3729546.50	0.57	4465365.00	83.5	60 - 125	
72 Ge # 1	540148.00	0.38	585533.19	92.2	60 - 125	
72 Ge # 2	125444.10	1.33	133876.66	93.7	60 - 125	
72 Ge # 3	835846.63	1.69	993526.00	84.1	60 - 125	
115 In # 3	5880626.50	2.17	6583701.50	89.3	60 - 125	
159 Tb # 3	6887795.50	1.87	7699524.00	89.5	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13034.D\98E13034.D#
Date Acquired:	May 26 2016 03:06 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-09
Misc Info:	
Vial Number:	2203
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	98521.8	0.0000	16.5200	ppb	0.65	50.00	
9 Be	# 3	6	2125.8	0.0000	1.2450	ppb	3.36	50.00	
11 B	# 3	6	10026.5	0.0000	7.4410	ppb	0.91	100.00	
23 Na	# 1	45	336437.7	0.0000	52.3300	ppb	1.35	50000.00	
24 Mg	# 3	45	50687640.0	0.0000	3764.0000	ppb	2.31	50000.00	
27 Al	# 3	45	319692990.0	0.0000	17520.0000	ppb	1.34	50000.00	
28 Si	# 1	45	3873767.0	0.0000	3493.0000	ppb	1.23	10000.00	
31 P	# 3	45	438107.0	0.0000	394.1000	ppb	0.50	400000.00	
39 K	# 2	45	1649310.0	0.0000	3676.0000	ppb	2.15	50000.00	
40 Ca	# 1	45	635055420.0	0.0000	73030.0000	ppb	0.93	50000.00	>LRS
47 Ti	# 3	45	628129.5	0.0000	254.6000	ppb	0.90	500.00	
51 V	# 2	45	180972.3	0.0000	32.7400	ppb	0.50	500.00	
52 Cr	# 2	45	127565.3	0.0000	19.1000	ppb	0.37	500.00	
55 Mn	# 3	45	13694800.0	0.0000	337.9000	ppb	0.96	3000.00	
56 Fe	# 1	45	339646500.0	0.0000	16990.0000	ppb	1.22	50000.00	
59 Co	# 3	45	237885.3	0.0000	7.3330	ppb	0.50	500.00	
60 Ni	# 2	45	48670.1	0.0000	16.1100	ppb	0.90	500.00	
63 Cu	# 2	45	106013.0	0.0000	13.4200	ppb	0.24	500.00	
66 Zn	# 3	72	243727.3	0.0000	50.4500	ppb	0.73	500.00	
75 As	# 2	72	5194.0	0.0000	6.2590	ppb	1.24	500.00	
78 Se	# 1	72	190.0	0.0000	0.2474	ppb	8.65	500.00	
88 Sr	# 3	72	5677776.0	0.0000	113.7000	ppb	0.49	500.00	
90 Zr	# 3	72	120513.8	0.0000	2.8950	ppb	1.17	1000.00	
95 Mo	# 3	115	4558.8	0.0000	0.4476	ppb	2.65	500.00	
107 Ag	# 3	115	1668.0	0.0000	0.0656	ppb	3.68	50.00	
111 Cd	# 3	115	2330.2	0.0000	0.4353	ppb	2.30	500.00	
118 Sn	# 3	115	54973.3	0.0000	3.6610	ppb	1.24	500.00	
121 Sb	# 3	115	6159.6	0.0000	0.2933	ppb	5.35	500.00	
137 Ba	# 3	115	2199809.0	0.0000	306.4000	ppb	2.63	1000.00	
182 W	# 3	159	2250.3	0.0000	0.1541	ppb	3.73	1000.00	
205 Tl	# 3	159	8293.4	0.0000	0.2576	ppb	5.78	500.00	
208 Pb	# 3	159	741174.4	0.0000	16.1600	ppb	1.50	500.00	
235 U	# 3	159	206.7	0.0000	0.0043	ppb	14.64	5.00	
238 U	# 3	159	28836.1	0.0000	0.6712	ppb	1.79	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	408484.09	2.25	855442.00	47.8	60 - 125	ISFail
45 Sc	# 1	1973160.10	0.47	1984276.00	99.4	60 - 125	
45 Sc	# 2	197614.00	0.91	203946.81	96.9	60 - 125	
45 Sc	# 3	3741222.80	0.93	4465365.00	83.8	60 - 125	
72 Ge	# 1	544114.50	1.61	585533.19	92.9	60 - 125	
72 Ge	# 2	128439.98	1.18	133876.66	95.9	60 - 125	
72 Ge	# 3	876358.94	1.35	993526.00	88.2	60 - 125	
115 In	# 3	5970209.50	1.93	6583701.50	90.7	60 - 125	
159 Tb	# 3	7102425.50	0.55	7699524.00	92.2	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13035.D\98E13035.D#
Date Acquired:	May 26 2016 03:10 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-10
Misc Info:	
Vial Number:	2204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	93098.3	0.0000	15.5600	ppb	0.79	50.00	
9 Be	# 3	6	1823.5	0.0000	1.0800	ppb	5.04	50.00	
11 B	# 3	6	9601.7	0.0000	7.2070	ppb	1.29	100.00	
23 Na	# 1	45	319938.1	0.0000	50.1100	ppb	3.43	50000.00	
24 Mg	# 3	45	43460080.0	0.0000	3285.0000	ppb	2.29	50000.00	
27 Al	# 3	45	284108420.0	0.0000	15850.0000	ppb	1.23	50000.00	
28 Si	# 1	45	3876448.0	0.0000	3580.0000	ppb	1.15	10000.00	
31 P	# 3	45	372826.1	0.0000	339.0000	ppb	1.58	400000.00	
39 K	# 2	45	1390182.0	0.0000	3173.0000	ppb	1.07	50000.00	
40 Ca	# 1	45	1125431000.0	0.0000	132500.0000	ppb	1.79	50000.00	>LRS
47 Ti	# 3	45	627415.0	0.0000	258.8000	ppb	1.28	500.00	
51 V	# 2	45	186846.6	0.0000	34.7100	ppb	0.87	500.00	
52 Cr	# 2	45	113048.3	0.0000	17.3700	ppb	0.69	500.00	
55 Mn	# 3	45	11299250.0	0.0000	283.7000	ppb	0.50	3000.00	
56 Fe	# 1	45	300317600.0	0.0000	15390.0000	ppb	0.60	50000.00	
59 Co	# 3	45	220240.8	0.0000	6.9100	ppb	2.06	500.00	
60 Ni	# 2	45	43171.9	0.0000	14.6500	ppb	0.94	500.00	
63 Cu	# 2	45	89570.9	0.0000	11.6300	ppb	1.63	500.00	
66 Zn	# 3	72	182526.8	0.0000	40.0700	ppb	1.02	500.00	
75 As	# 2	72	5245.3	0.0000	6.5290	ppb	1.98	500.00	
78 Se	# 1	72	192.0	0.0000	0.2566	ppb	3.79	500.00	
88 Sr	# 3	72	4941251.0	0.0000	105.1000	ppb	1.14	500.00	
90 Zr	# 3	72	99875.2	0.0000	2.5450	ppb	0.55	1000.00	
95 Mo	# 3	115	4197.5	0.0000	0.4294	ppb	2.63	500.00	
107 Ag	# 3	115	1162.3	0.0000	0.0471	ppb	2.44	50.00	
111 Cd	# 3	115	2168.6	0.0000	0.4223	ppb	3.39	500.00	
118 Sn	# 3	115	52536.6	0.0000	3.6490	ppb	1.60	500.00	
121 Sb	# 3	115	6058.4	0.0000	0.3013	ppb	1.85	500.00	
137 Ba	# 3	115	1888071.0	0.0000	274.2000	ppb	1.93	1000.00	
182 W	# 3	159	1701.3	0.0000	0.1191	ppb	0.84	1000.00	
205 Tl	# 3	159	7069.1	0.0000	0.2270	ppb	1.37	500.00	
208 Pb	# 3	159	654205.0	0.0000	14.8100	ppb	0.28	500.00	
235 U	# 3	159	224.5	0.0000	0.0048	ppb	10.58	5.00	
238 U	# 3	159	26592.8	0.0000	0.6425	ppb	0.35	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	403294.09	1.44	855442.00	47.1	60 - 125	ISFail
45 Sc # 1	1926783.10	0.07	1984276.00	97.1	60 - 125	
45 Sc # 2	192532.98	1.60	203946.81	94.4	60 - 125	
45 Sc # 3	3675606.30	0.98	4465365.00	82.3	60 - 125	
72 Ge # 1	530450.69	0.50	585533.19	90.6	60 - 125	
72 Ge # 2	124366.22	0.83	133876.66	92.9	60 - 125	
72 Ge # 3	825241.63	1.36	993526.00	83.1	60 - 125	
115 In # 3	5724797.50	1.01	6583701.50	87.0	60 - 125	
159 Tb # 3	6841150.50	0.35	7699524.00	88.9	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13036.D\98E13036.D#
Date Acquired:	May 26 2016 03:15 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-11
Misc Info:	
Vial Number:	2205
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	112598.2	0.0000	18.9100	ppb	1.14	50.00	
9 Be	# 3	6	2367.0	0.0000	1.3410	ppb	3.48	50.00	
11 B	# 3	6	11582.3	0.0000	8.3630	ppb	5.43	100.00	
23 Na	# 1	45	300679.8	0.0000	43.5100	ppb	1.75	50000.00	
24 Mg	# 3	45	47558592.0	0.0000	3437.0000	ppb	4.87	50000.00	
27 Al	# 3	45	353603490.0	0.0000	18860.0000	ppb	5.08	50000.00	
28 Si	# 1	45	3319891.0	0.0000	3001.0000	ppb	1.21	10000.00	
31 P	# 3	45	678118.2	0.0000	602.9000	ppb	4.69	400000.00	
39 K	# 2	45	1662063.0	0.0000	3632.0000	ppb	1.24	50000.00	
40 Ca	# 1	45	407016290.0	0.0000	46920.0000	ppb	2.36	50000.00	
47 Ti	# 3	45	763461.0	0.0000	301.0000	ppb	0.21	500.00	
51 V	# 2	45	229863.4	0.0000	40.8300	ppb	0.20	500.00	
52 Cr	# 2	45	134067.1	0.0000	19.6900	ppb	0.32	500.00	
55 Mn	# 3	45	18061530.0	0.0000	433.5000	ppb	0.76	3000.00	
56 Fe	# 1	45	419895490.0	0.0000	21060.0000	ppb	0.39	50000.00	
59 Co	# 3	45	255149.6	0.0000	7.6530	ppb	1.72	500.00	
60 Ni	# 2	45	50420.1	0.0000	16.3700	ppb	0.54	500.00	
63 Cu	# 2	45	137767.3	0.0000	17.1300	ppb	0.25	500.00	
66 Zn	# 3	72	347437.1	0.0000	72.3400	ppb	0.49	500.00	
75 As	# 2	72	6880.3	0.0000	8.1980	ppb	1.51	500.00	
78 Se	# 1	72	243.6	0.0000	0.3200	ppb	6.42	500.00	
88 Sr	# 3	72	5233157.0	0.0000	105.2000	ppb	1.60	500.00	
90 Zr	# 3	72	189880.1	0.0000	4.5930	ppb	1.17	1000.00	
95 Mo	# 3	115	7031.1	0.0000	0.6935	ppb	2.95	500.00	
107 Ag	# 3	115	2248.1	0.0000	0.0889	ppb	2.55	50.00	
111 Cd	# 3	115	4086.0	0.0000	0.7663	ppb	2.42	500.00	
118 Sn	# 3	115	56743.9	0.0000	3.7700	ppb	0.89	500.00	
121 Sb	# 3	115	7026.7	0.0000	0.3368	ppb	2.12	500.00	
137 Ba	# 3	115	1880851.0	0.0000	261.3000	ppb	1.45	1000.00	
182 W	# 3	159	2799.3	0.0000	0.1901	ppb	2.18	1000.00	
205 Tl	# 3	159	8141.0	0.0000	0.2478	ppb	4.89	500.00	
208 Pb	# 3	159	1079678.0	0.0000	23.1100	ppb	2.36	500.00	
235 U	# 3	159	222.2	0.0000	0.0045	ppb	6.11	5.00	
238 U	# 3	159	30801.4	0.0000	0.7033	ppb	0.89	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	422192.72	2.74	855442.00	49.4	60 - 125	ISFail
45 Sc	# 1	1968252.00	0.31	1984276.00	99.2	60 - 125	
45 Sc	# 2	201539.14	0.26	203946.81	98.8	60 - 125	
45 Sc	# 3	3846187.00	1.92	4465365.00	86.1	60 - 125	
72 Ge	# 1	543782.63	0.26	585533.19	92.9	60 - 125	
72 Ge	# 2	130060.57	0.98	133876.66	97.1	60 - 125	
72 Ge	# 3	872522.56	0.93	993526.00	87.8	60 - 125	
115 In	# 3	5984655.50	0.79	6583701.50	90.9	60 - 125	
159 Tb	# 3	7239814.00	0.92	7699524.00	94.0	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13037.D\98E13037.D#
Date Acquired:	May 26 2016 03:19 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-12
Misc Info:	
Vial Number:	2206
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	122833.8	0.0000	20.9200	ppb	2.50	50.00	
9 Be	# 3	6	1966.9	0.0000	1.1010	ppb	5.53	50.00	
11 B	# 3	6	14989.2	0.0000	10.8100	ppb	3.44	100.00	
23 Na	# 1	45	503076.1	0.0000	98.0500	ppb	1.83	50000.00	
24 Mg	# 3	45	78368232.0	0.0000	5705.0000	ppb	0.53	50000.00	
27 Al	# 3	45	335217600.0	0.0000	18010.0000	ppb	1.20	50000.00	
28 Si	# 1	45	3019374.0	0.0000	2803.0000	ppb	1.44	10000.00	
31 P	# 3	45	865770.7	0.0000	780.7000	ppb	1.15	400000.00	
39 K	# 2	45	1725517.0	0.0000	3908.0000	ppb	1.12	50000.00	
40 Ca	# 1	45	1163190000.0	0.0000	137700.0000	ppb	1.25	50000.00	>LRS
47 Ti	# 3	45	700097.7	0.0000	278.2000	ppb	0.96	500.00	
51 V	# 2	45	198956.7	0.0000	36.5700	ppb	1.73	500.00	
52 Cr	# 2	45	119755.4	0.0000	18.2000	ppb	0.43	500.00	
55 Mn	# 3	45	13839180.0	0.0000	334.8000	ppb	0.25	3000.00	
56 Fe	# 1	45	332928380.0	0.0000	17150.0000	ppb	0.93	50000.00	
59 Co	# 3	45	220002.3	0.0000	6.6490	ppb	1.47	500.00	
60 Ni	# 2	45	47194.4	0.0000	15.8500	ppb	1.58	500.00	
63 Cu	# 2	45	118822.9	0.0000	15.2800	ppb	1.18	500.00	
66 Zn	# 3	72	350413.9	0.0000	76.2100	ppb	1.22	500.00	
75 As	# 2	72	5788.0	0.0000	7.2070	ppb	2.60	500.00	
78 Se	# 1	72	271.3	0.0000	0.3723	ppb	2.38	500.00	
88 Sr	# 3	72	12240890.0	0.0000	257.1000	ppb	1.54	500.00	
90 Zr	# 3	72	192115.4	0.0000	4.8540	ppb	2.39	1000.00	
95 Mo	# 3	115	7023.4	0.0000	0.7174	ppb	1.99	500.00	
107 Ag	# 3	115	2022.5	0.0000	0.0827	ppb	4.48	50.00	
111 Cd	# 3	115	4569.4	0.0000	0.8883	ppb	3.90	500.00	
118 Sn	# 3	115	55416.0	0.0000	3.8110	ppb	0.48	500.00	
121 Sb	# 3	115	6524.2	0.0000	0.3227	ppb	1.75	500.00	
137 Ba	# 3	115	3357605.0	0.0000	482.8000	ppb	1.14	1000.00	
182 W	# 3	159	3766.3	0.0000	0.2744	ppb	2.76	1000.00	
205 Tl	# 3	159	7336.0	0.0000	0.2360	ppb	3.45	500.00	
208 Pb	# 3	159	1105331.0	0.0000	25.0400	ppb	1.30	500.00	
235 U	# 3	159	277.8	0.0000	0.0060	ppb	4.33	5.00	
238 U	# 3	159	35614.1	0.0000	0.8613	ppb	4.22	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	426133.84	1.75	855442.00	49.8	60 - 125	ISFail
45 Sc # 1	1916496.40	1.81	1984276.00	96.6	60 - 125	
45 Sc # 2	194674.16	0.60	203946.81	95.5	60 - 125	
45 Sc # 3	3815704.50	0.86	4465365.00	85.5	60 - 125	
72 Ge # 1	523147.38	0.84	585533.19	89.3	60 - 125	
72 Ge # 2	124386.02	0.47	133876.66	92.9	60 - 125	
72 Ge # 3	835519.25	1.16	993526.00	84.1	60 - 125	
115 In # 3	5781828.00	1.38	6583701.50	87.8	60 - 125	
159 Tb # 3	6840501.00	1.24	7699524.00	88.8	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13038.D\98E13038.D#
Date Acquired:	May 26 2016 03:24 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	E143-13
Misc Info:	
Vial Number:	2207
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	118896.2	0.0000	20.1400	ppb	1.22	50.00	
9 Be	# 3	6	2252.5	0.0000	1.2680	ppb	2.66	50.00	
11 B	# 3	6	12012.7	0.0000	8.6220	ppb	2.89	100.00	
23 Na	# 1	45	345507.1	0.0000	56.1800	ppb	4.03	50000.00	
24 Mg	# 3	45	56520180.0	0.0000	4097.0000	ppb	1.91	50000.00	
27 Al	# 3	45	349943620.0	0.0000	18720.0000	ppb	1.18	50000.00	
28 Si	# 1	45	3648234.0	0.0000	3348.0000	ppb	0.54	10000.00	
31 P	# 3	45	565984.9	0.0000	501.9000	ppb	1.04	400000.00	
39 K	# 2	45	1641885.0	0.0000	3678.0000	ppb	0.95	50000.00	
40 Ca	# 1	45	764779580.0	0.0000	89510.0000	ppb	1.07	50000.00	>LRS
47 Ti	# 3	45	747342.5	0.0000	295.7000	ppb	0.51	500.00	
51 V	# 2	45	198534.6	0.0000	36.1200	ppb	0.57	500.00	
52 Cr	# 2	45	516843.6	0.0000	77.9000	ppb	0.88	500.00	
55 Mn	# 3	45	14385980.0	0.0000	346.5000	ppb	1.15	3000.00	
56 Fe	# 1	45	357084000.0	0.0000	18180.0000	ppb	0.67	50000.00	
59 Co	# 3	45	255558.6	0.0000	7.6920	ppb	1.72	500.00	
60 Ni	# 2	45	52461.2	0.0000	17.4600	ppb	0.73	500.00	
63 Cu	# 2	45	354143.1	0.0000	45.2700	ppb	0.96	500.00	
66 Zn	# 3	72	1175697.0	0.0000	251.1000	ppb	1.11	500.00	
75 As	# 2	72	4768.3	0.0000	5.9010	ppb	0.90	500.00	
78 Se	# 1	72	340.5	0.0000	0.4646	ppb	4.12	500.00	
88 Sr	# 3	72	5620794.0	0.0000	115.7000	ppb	0.68	500.00	
90 Zr	# 3	72	160128.3	0.0000	3.9610	ppb	1.04	1000.00	
95 Mo	# 3	115	27281.8	0.0000	2.7790	ppb	1.10	500.00	
107 Ag	# 3	115	19559.4	0.0000	0.8076	ppb	2.94	50.00	
111 Cd	# 3	115	40253.9	0.0000	7.7790	ppb	1.41	500.00	
118 Sn	# 3	115	141417.2	0.0000	9.6220	ppb	0.65	500.00	
121 Sb	# 3	115	10647.2	0.0000	0.5346	ppb	1.72	500.00	
137 Ba	# 3	115	3072223.0	0.0000	436.5000	ppb	0.93	1000.00	
182 W	# 3	159	3261.7	0.0000	0.2292	ppb	2.77	1000.00	
205 Tl	# 3	159	8109.8	0.0000	0.2537	ppb	1.36	500.00	
208 Pb	# 3	159	11608880.0	0.0000	255.3000	ppb	0.20	500.00	
235 U	# 3	159	278.9	0.0000	0.0058	ppb	12.43	5.00	
238 U	# 3	159	36731.1	0.0000	0.8619	ppb	0.71	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	425010.38	1.34	855442.00	49.7	60 - 125	ISFail
45 Sc # 1	1938670.10	1.13	1984276.00	97.7	60 - 125	
45 Sc # 2	196658.30	0.26	203946.81	96.4	60 - 125	
45 Sc # 3	3831961.30	0.24	4465365.00	85.8	60 - 125	
72 Ge # 1	529077.13	1.27	585533.19	90.4	60 - 125	
72 Ge # 2	125012.95	0.25	133876.66	93.4	60 - 125	
72 Ge # 3	852747.56	1.14	993526.00	85.8	60 - 125	
115 In # 3	5851752.00	0.34	6583701.50	88.9	60 - 125	
159 Tb # 3	7047842.50	0.34	7699524.00	91.5	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCV QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13040.D\98E13040.D#
Date Acquired:	May 26 2016 03:39 pm
Operator:	CCapul
Sample Name:	CCV3
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal Update:	May 26 2016 01:12 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element	Conc.	CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.95 ppb	260602.70	0.68	25.00	90 - 110	
9 Be	25.16 ppb	81933.29	2.16	25.00	90 - 110	
11 B	48.54 ppb	121253.30	2.86	50.00	90 - 110	
23 Na	25420.00 ppb	99391936.00	0.82	25000.00	90 - 110	
24 Mg	26700.00 ppb	401587490.00	2.58	25000.00	90 - 110	
27 Al	26840.00 ppb	547115070.00	1.74	25000.00	90 - 110	
28 Si	2599.00 ppb	2835306.00	0.95	2500.00	90 - 110	
31 P	266.70 ppb	338051.31	0.35	250.00	90 - 110	
39 K	25470.00 ppb	11177830.00	0.46	25000.00	90 - 110	
40 Ca	24890.00 ppb	212873200.00	0.54	25000.00	90 - 110	
47 Ti	249.80 ppb	688306.38	1.22	250.00	90 - 110	
51 V	250.30 ppb	1363852.00	0.62	250.00	90 - 110	
52 Cr	247.50 ppb	1635236.00	0.05	250.00	90 - 110	
55 Mn	1486.00 ppb	67241136.00	1.39	1500.00	90 - 110	
56 Fe	24470.00 ppb	480938590.00	0.64	25000.00	90 - 110	
59 Co	238.10 ppb	8615542.00	0.75	250.00	90 - 110	
60 Ni	242.50 ppb	718137.31	0.83	250.00	90 - 110	
63 Cu	242.30 ppb	1885477.00	0.31	250.00	90 - 110	
66 Zn	245.60 ppb	1170495.00	0.71	250.00	90 - 110	
75 As	252.70 ppb	199493.20	0.94	250.00	90 - 110	
78 Se	253.40 ppb	183827.09	0.91	250.00	90 - 110	
88 Sr	248.20 ppb	12273170.00	0.24	250.00	90 - 110	
90 Zr	20.09 ppb	823049.13	2.21	25.00	90 - 110	Fail
95 Mo	255.10 ppb	2350059.00	0.95	250.00	90 - 110	
107 Ag	24.39 ppb	554549.31	1.10	25.00	90 - 110	
111 Cd	247.00 ppb	1202122.00	0.80	250.00	90 - 110	
118 Sn	251.90 ppb	3481659.00	0.21	250.00	90 - 110	
121 Sb	243.20 ppb	4371639.00	1.14	250.00	90 - 110	
137 Ba	499.40 ppb	3309091.00	0.49	500.00	90 - 110	
182 W	28.20 ppb	363722.41	1.04	25.00	90 - 110	Fail
205 Tl	241.80 ppb	7054312.00	1.24	250.00	90 - 110	
208 Pb	233.20 ppb	9979019.00	0.49	250.00	90 - 110	
235 U	1.67 ppb	74880.54	1.65	1.80	90 - 110	
238 U	247.80 ppb	9923715.00	1.84	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	786832.88	1.79	855442.00	92.0	60 - 125	
45 Sc	1940451.30	0.90	1984276.00	97.8	60 - 125	
45 Sc	195896.97	0.91	203946.81	96.1	60 - 125	
45 Sc	4178518.30	1.18	4465365.00	93.6	60 - 125	
72 Ge	535730.69	1.45	585533.19	91.5	60 - 125	
72 Ge	122773.84	1.20	133876.66	91.7	60 - 125	
72 Ge	867757.75	1.30	993526.00	87.3	60 - 125	
115 In	5508995.50	0.79	6583701.50	83.7	60 - 125	
159 Tb	6633179.00	0.97	7699524.00	86.2	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	D:\DATA\I982016\E\I98E13.B\98E13041.D\98E13041.D#
Date Acquired:	May 26 2016 03:43 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB3
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	D:\DATA\I982016\A\I98A01.B\EMX6020H.C
Last Cal. Update:	May 26 2016 01:12 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.3712	ppb	49282.5	32.17	0.20	Fail
9 Be	-0.0013	ppb	36.7	264.69	0.10	
11 B	0.2080	ppb	1251.2	16.60	5.00	
23 Na	-3.9720	ppb	110436.1	17.38	40.00	
24 Mg	2.4920	ppb	51489.8	16.79	10.00	
27 Al	5.6460	ppb	117677.4	14.42	20.00	
28 Si	3.5390	ppb	5589.2	1.71	20.00	
31 P	2.3740	ppb	24156.9	12.73	10.00	
39 K	10.9000	ppb	30091.2	7.80	20.00	
40 Ca	13.5700	ppb	140475.0	16.60	25.00	
47 Ti	0.0728	ppb	312.2	19.23	0.50	
51 V	0.0177	ppb	1255.2	24.85	0.50	
52 Cr	0.0046	ppb	289.8	20.13	0.20	
55 Mn	0.1400	ppb	10396.0	18.56	0.20	
56 Fe	6.5350	ppb	132118.3	15.30	10.00	
59 Co	0.0116	ppb	786.7	18.79	0.20	
60 Ni	-0.0528	ppb	421.3	15.59	0.20	
63 Cu	0.0090	ppb	784.0	14.13	0.40	
66 Zn	0.0477	ppb	1399.0	33.18	2.00	
75 As	0.0319	ppb	52.4	14.66	0.20	
78 Se	0.0385	ppb	36.7	16.54	0.20	
88 Sr	0.0312	ppb	2292.7	20.51	0.20	
90 Zr	-0.0041	ppb	653.4	61.11	2.00	
95 Mo	0.1411	ppb	1515.7	9.55	0.40	
107 Ag	0.0021	ppb	104.4	47.13	0.20	
111 Cd	0.0199	ppb	140.6	19.62	0.20	
118 Sn	0.1068	ppb	1742.4	9.23	0.20	
121 Sb	0.3335	ppb	7021.1	2.51	0.40	
137 Ba	0.0810	ppb	651.2	14.19	0.20	
182 W	0.0169	ppb	341.1	24.60	1.00	
205 Tl	0.0215	ppb	880.1	5.46	0.20	
208 Pb	0.0265	ppb	1847.9	17.65	0.10	
235 U	0.0003	ppb	15.6	14.21	1.00	
238 U	0.0358	ppb	1521.3	9.57	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	719681.8	1.49	855442.00	84.1	60 - 125	
45 Sc	1931046.9	1.31	1984276.00	97.3	60 - 125	
45 Sc	198929.6	0.29	203946.81	97.5	60 - 125	
45 Sc	4145555.3	0.43	4465365.00	92.8	60 - 125	
72 Ge	550150.5	0.82	585533.19	94.0	60 - 125	
72 Ge	128429.8	1.16	133876.66	95.9	60 - 125	
72 Ge	881950.8	0.54	993526.00	88.8	60 - 125	
115 In	6035818.0	0.29	6583701.50	91.7	60 - 125	
159 Tb	6811903.5	0.81	7699524.00	88.5	60 - 125	

ISTD Ref File : D:\DATA\I982016\E\I98E13.B\98E13004.D\98E13004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 02515001

Book #: EIM-059
Batch: IME0345
Matrix: Soil
Digestor ID: C

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	92.8 °C		92.2 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 03 - 05	4
LCS-2	SM6A - 007 - 03 - 06	4
MS	Same spike soln & vol as	LCS 1 & 2
Blank Soil (Bead)	SM5A - 03 - 02 - 09	2g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SW1A - 005 - 16 - 15	10
HCl	SW1A - 005 - 15 - 24	5+5
H_2O_2	SW1A - 005 - 14 - 23	10
HNO_3(1:1)	SM5B - 03 - 09 - 04	10
pH Strip (0-14)	NA	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 07
☑ Thermometer ID:	150590648/C20
☑ Pipette ID:	142780357
☐ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP

Standard Added By: SP Witnessed By: [illegible]

Extract Rcvd By: [illegible] Checked By: [illegible]

EMAX LABORATORIES

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IME034S01	IME034SB	2.05	g	5/23/16 14:25	100	2	100	1	
16IME034S02	IME034SL	2.04	g	5/23/16 14:26	100	2	100	1	
16IME034S03	E143-01	2.03	g	5/23/16 14:27	100	2	100	0.985	✓
16IME034S04	E143-02	2.05	g	5/23/16 14:28	100	2	100	0.976	✓
16IME034S05	E143-03	2.05	g	5/23/16 14:29	100	2	100	0.976	✓
16IME034S06	E143-04	2.05	g	5/23/16 14:30	100	2	100	0.976	✓
16IME034S07	E143-05	2.07	g	5/23/16 14:30	100	2	100	0.966	✓
16IME034S08	E143-06	2.07	g	5/23/16 14:32	100	2	100	0.966	✓
16IME034S09	E143-06M	2.06	g	5/23/16 14:33	100	2	100	0.971	✓
16IME034S10	E143-06D	2.05	g	5/23/16 14:34	100	2	100	0.976	✓
16IME034S11	E143-07	2.04	g	5/23/16 14:34	100	2	100	0.98	✓
16IME034S12	E143-08	2.04	g	5/23/16 14:35	100	2	100	0.98	✓
16IME034S13	E143-09	2.05	g	5/23/16 14:36	100	2	100	0.976	✓
16IME034S14	E143-10	2.02	g	5/23/16 14:37	100	2	100	0.99	✓
16IME034S15	E143-11	2.07	g	5/23/16 14:38	100	2	100	0.966	✓
16IME034S16	E143-12	2.05	g	5/23/16 14:39	100	2	100	0.976	✓
16IME034S17	E143-13	2.08	g	5/23/16 14:39	100	2	100	0.962	✓

SP 5/23/16

Balance ID: 10203192. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/23/16 14:40

Prepared By: SPara

☑ Digestion Ended @ 5/23/16 17:56

Checked By: [illegible]

Comments:

Date 5/23/16

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E143 **URS Chemist: Jennifer Zorinsky**
Date Verified: 6/15/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
CA012-SS02-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-C85-SS01A-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS03-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS03-200.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS04-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS05-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS06-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS07-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS08-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS07-200.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS09-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS10-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)
CA012-SS11-000.5	5/14/2016	5/17/2016	Soil	Arsenic (6020A)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD-QSM deviations noted in the laboratory case narrative?		X	
Were DoD-QSM corrective actions followed if deviations were noted?			X
Were any issues noted in the cooler receipt form?	X		

The laboratory case narrative no problems or discrepancies were encountered.

The cooler receipt form indicated one sample ID on the COC did not match the sample ID on the label. Corrections were made to the sample labels; however, the corrections were not initialed and dated. These issues are discussed further in Section 2.0.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?		X
Were all sample identifications (IDs) documented correctly on sample labels?		X
Did samples listed on COCs match the sample labels?		X
Were samples relinquished properly on the COC?	X	

The cooler receipt form indicated one sample ID on the COC did not match the sample ID on the label. The sample ID on the COC was CA012-C85-SS01A-000.5; the sample ID on the label was CA012-C85-SS01-000.5. Per the URS chemist, the correct sample ID was CA012-C85-SS01A-000.5. Corrections were made to the sample labels; however, the corrections were not initialed and dated. No qualification of data was required.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E143 **URS Chemist: Jennifer Zorinsky**
Date Verified: 6/15/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

3.0 Holding Time

Verification Criteria	Yes	No	N/A
Were all samples extracted/analyzed within holding time?	X		
Were samples outside holding time extracted/analyzed < 2x holding time?			X
Were samples outside holding time extracted/analyzed > 2x holding time?			X

4.0 Instrument Performance Check (Tuning)

Method 6020A Instrument Tuning Criteria (Filename)	98E13001.D	
Instrument:	**98**	
Date of Tuning:	**5/26/2016**	
	Yes	**No**
Was instrument tuning completed prior to calibration?	X	
Was mass calibration ≤ 0.1 amu from true value?	X	
Was resolution < 0.9 amu full width at 10% peak height?	X	
For stability, was the RSD ≤ 5% for at least four replicate analytes?	X	

5.0 Initial Calibration

Method 6020A Initial Calibration Criteria			
Instrument:	**98**		
Date of Calibration:	**5/26/2016**		
	Yes	**No**	**N/A**
Was a minimum of two standards and a calibration blank used for ICAL?	X		
Was r ≥ 0.995?	X		

6.0 Initial Calibration Verification [(ICV) Second Source]

Method 6020A ICV Criteria (Filename)	98E13009.D.D		
Instrument:	**98**		
Date of Initial Calibration Verification	**5/26/2016**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV %recovery (%R) for all analytes within 90-110%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E143 **URS Chemist: Jennifer Zorinsky**
Date Verified: 6/15/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

7.0 Continuing Calibration Verification (CCV)

Method 6020A CCV Criteria (Date)	All CCVs on 5/26/2016		
Instrument:	98		
	Yes	No	N/A
Was the CCV analyzed after every 10 samples and at the end of the analysis sequence?	X		
Were the CCV %Rs for all analytes within 90-110%?	X		

8.0 Blank Samples

Blank Criteria	Yes	No	N/A
Was a method blank analyzed with every preparatory batch?	X		
Were analytes detected > ½ the LOQ and > 1/10 the amount measured in any sample or 1/10 the regulatory limit?		X	
Were target analytes detected in method, trip or calibration blanks?		X	

9.0 Laboratory Control Sample (LCS)

LCS Criteria	Yes	No	N/A
Was an LCS analyzed with every preparatory batch?	X		
Were LCS recoveries within acceptance criteria listed in the UFP-QAPP?	X		

10.0 Internal Standards (IS)

Methods 6020A Internal Standard Criteria	Yes	No	N/A
Were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standard areas within 30% to 120% of the ICAL midpoint standard area?	X		

11.0 Interference Check Sample (6020A Metals only)

Interference Check Sample Criteria	Yes	No	N/A
Were ICS-A and ICSAB samples analyzed at the beginning of the analytical run and every 12 hours?	X		
Was the ICS-A absolute value concentration for all non-spiked metals < LOD (unless they are a verified trace impurity form one of the spiked metals)	X		
Were the ICS-AB recoveries within ± 20%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E143 **URS Chemist: Jennifer Zorinsky**
Date Verified: 6/15/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

12.0 Matrix Spike/Matrix Spike Duplicate

MS/MSD Criteria	Yes	No	N/A
Was a MS/MSD sample analyzed with every preparatory batch?	X		
Was a MS/MSD sample collected for this SDG?	X		
Were MS/MSD recoveries/RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CA012-SS05-000.5 was spiked and analyzed for arsenic.

13.0 Matrix Duplicate

Matrix Duplicate (MD) Criteria	Yes	No	N/A
Were MD samples analyzed with every preparatory batch?	X		
Were MD samples collected for this SDG?	X		
Were MD RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CA012-SS05-000.5 was duplicated and analyzed for arsenic.

14.0 Dilution Test

Method 6020A Dilution Test Criteria	Yes	No	N/A
Was a dilution test sample analyzed with every preparatory batch?	X		
Was a dilution test sample analyzed from this SDG?	X		
Were metals concentrations > 50x the LOQ?		X	
Did the five-fold dilution agree within ± 10% of the original measurement?	X		
If the five-fold dilution did not agree within ± 10% of the original measurement, was a post digestion spike sample analyzed?			X

Sample CA012-SS05-000.5 was diluted and analyzed for arsenic.

15.0 Post Digestion Spike (PDS)

Method 6020A PDS Criteria	Yes	No	N/A
Was a PDS sample analyzed from this SDG?	X		
Was a PDS sample analyzed if the dilution test failed or metals concentrations were < 50 x the LOD?	X		
Were the PDS recoveries within 75-125%?	X		

Sample CA012-SS05-000.5 was spiked and analyzed for arsenic.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E143 **URS Chemist: Jennifer Zorinsky**
Date Verified: 6/15/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

16.0 Field Duplicate Samples

Field Duplicate Criteria	Yes	No	N/A
Were field duplicate samples collected for this SDG? (if yes, list below)	X		
Were parent sample / field duplicate RPDs ≤ 50% for soil analytes that had concentrations > 5x the LOQ.	X		
Were the differences between the parent sample / field duplicate < 2x the LOQ for analytes that had concentrations < 5x the LOQ			X

Parent Sample ID	Field Duplicate Sample ID
CA012-SS03-000.5	CA012-SS03-200.5
CA012-SS07-000.5	CA012-SS07-200.5

17.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

18.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Were common laboratory contaminant concentrations < 2x the LOQ?			X
Was professional judgment used to qualify data (if yes, list below)?		X	

C.3 – SD017

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E082**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16E082**

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-24-2016
EMAX Batch No.: 16E082

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Laboratory Report
Project: CANNON AFB PBR

Enclosed is the Laboratory report for samples received on 05/10/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CA017-SB01-001	E082-01	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB01-201	E082-02	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB01-005	E082-03	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB01-010	E082-04	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB02-000.5	E082-05	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB02-005	E082-06	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB02-010	E082-07	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB03-001	E082-08	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB03-201	E082-09	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB03-004.5	E082-10	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB03-010	E082-11	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB04-002	E082-12	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB04-005	E082-13	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB04-010	E082-14	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB05-001	E082-15	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB05-005	E082-16	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB05-010	E082-17	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB06-000.5	E082-18	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB06-005	E082-19	05/08/16	SOIL	ARSENIC BY 6020

Sample ID	Control #	Col Date	Matrix	Analysis
CA017-SB06-010	E082-20	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB04-002MS	E082-12M	05/08/16	SOIL	ARSENIC BY 6020
CA017-SB04-002DUP	E082-12D	05/08/16	SOIL	ARSENIC BY 6020

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16E082

METHOD SW6020A
ARSENIC BY ICP-MS

A total of twenty (20) soil samples were received on 05/10/16 to be analyzed for Arsenic by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME024SB - 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) LCS was analyzed. Arsenic was within LCS QC limits in IME024SL. 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) MS was analyzed. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC 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.

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16E082
☑ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Shenfame
☐ EMAX Courier ☐ Client Delivery	7830 2451 7090	Date 051016 Time 0910

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: Changes made to the COC are not initialed/dated

PACKAGING INSPECTION

Container ☑ Cooler ☐ Box ☐ Other
Condition ☑ Custody Seal ☑ Intact ☐ Damaged
Packaging ☑ Bubble Pack ☐ Styrofoam ☐ Popcorn ☑ Sufficient ☑ Plastic bag
Temperatures (Cool, ≤6 °C but not frozen) ☐ Cooler 1_____ °C ☑ Cooler 2 1.5 °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 130638506 Specialyte B - S/N 140252070 C - S/N 140252067 D - S/N 150555630 FM 2/8/16

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2,10	2,10	D10		R1
9	9,10	D7	per label: 0925 (COC 0935)	R1

05/10/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in _____	D13	Out of Holding Time	R1	Proceed as indicated in ☑ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	_____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	_____
D10	No initial/date on corrections in COC/label	D22	_____	R10	_____
D11	Container count mismatch COC vs received	D23	_____	R11	_____
D12	Container size mismatch COC vs received	D24	_____	R12	_____

REVIEWS:

Sample Labeling [signature] **Date** 051016 / 5/10/16

SRF [signature] **Date** 5/10/16

PM [signature] **Date** 5/10/16

Do Not Lift Using This Tag

ORIGIN ID:CVNA (402) 321-0977
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 23.00 LB
CAD: 006993959/SSFE1703
DIMS: 23x14x12 IN

BILL THIRD PARTY

TO **SAMPLE CUSTODIAN**
EMAX LABORATORIES
1835 W. 205TH AVE

TORRANCE CA 90501

(310) 618-0818 REF:
INV:
PO: DEPT:

FedEx
Express

REL#
3785346

2 of 2

MPS# 0263 7830 2451 7105

Mstr# 7830 2451 7090 0201

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

A7 HHRA

90501
CA-US LAX

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16E082

Project Name	Project No.
Cannon AFB PBR	60425210
Project Location	**Project Manager**
CAFB, NM	Mike Sonderman
Sampler(s)	
K. Kloewer, J. Carritt	

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	Arsenic 6020A									Preservative / Remarks
1	5/8/16	0805		X	CA017-SB01-001	Soil	1	4 oz Glass jar	X									4°C
2	5/8/16	0815		X	CA017-SB01-201	Soil	1	4 oz Glass jar	X									4°C
3	5/8/16	0812		X	CA017-SB01-005	Soil	1	4 oz Glass jar	X									4°C
4	5/8/16	0825		X	CA017-SB01-010	Soil	1	4 oz Glass jar	X									4°C
5	5/8/16	0840		X	CA017-SB02-000.5	Soil	1	4 oz Glass jar	X									4°C
6	5/8/16	0850		X	CA017-SB02-005	Soil	1	4 oz Glass jar	X									4°C
7	5/8/16	0900		X	CA017-SB02-010	Soil	1	4 oz Glass jar	X									4°C
8	5/8/16	0925		X	CA017-SB03-001	Soil	1	4 oz Glass jar	X									4°C
9	5/8/16	0935		X	CA017-SB03-201	Soil	1	4 oz Glass jar	X									4°C
10	5/8/16	0934		X	CA017-SB03-004.5	Soil	1	4 oz Glass jar	X									4°C
11	5/8/16	0945		X	CA017-SB03-010	Soil	1	4 oz Glass jar	X									4°C
12	5/8/16	1002		X	CA017-SB04-002	Soil	2	4 oz Glass jar	X									4°C (MS/MSD)
13	5/8/16	1010		X	CA017-SB04-005	Soil	1	4 oz Glass jar	X									4°C
14	5/8/16	1027		X	CA017-SB04-010	Soil	1	4 oz Glass jar	X									4°C

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: [signature]	5/9/16	1500	Method of Shipment: FED EX	
Received by:			Airbill No.: —	
Relinquished by:			Lab Address: EMAX Laboratories 1835 West 205th Street Torrance, CA 90501	
Received for Laboratory by: [signature]	05/10/16	0910		Temp = 1.5°C

130422

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16E082

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: CAFB, NM
Project Manager: Mike Sonderman
Sampler(s): K. Klocwo, J. Carritt

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	Arsenic 6020A	Arsenic Thallium 6020A									Preservative / Remarks
15	5/8/16	1045		X	CA017-SB05-001	Soil	1	4 oz Glass jar	X										4°C
16	5/8/16	1051		X	CA017-SB05-005	Soil	1	4 oz Glass jar	X										4°C
17	5/8/16	1100		X	CA017-SB05-010	Soil	1	4 oz Glass jar	X										4°C
18	5/8/16	1115		X	CA017-SB06-000.5	Soil	1	4 oz Glass jar	X										4°C
19	5/8/16	1121		X	CA017-SB06-005	Soil	1	4 oz Glass jar	X										4°C
20	5/8/16	1128		X	CA017-SB06-010	Soil	1	4 oz Glass jar	X										4°C
	5/9/16	0755		X	CA102-SB05-007	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	0810		X	CA102-SB05-015	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	0845		X	CA102-SB06-007	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	0905		X	CA102-SB06-015	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	0930		X	CA102-SB07-007	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	0955		X	CA102-SB07-015	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	1020		X	CA102-SB08-007	Soil	1	4 oz Glass jar		X									4°C
	5/9/16	1021		X	CA102-SB08-207	Soil	1	4 oz Glass jar		X									4°C

2 BATCH ANJOTTAOK

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: [signature]	5/9/16	1500	Method of Shipment: FED EX	
Received by:			Airbill No.: –	
Relinquished by:			Lab Address: EMax Laboratories, 1835 West 205th Street, Torrance, CA ~~90710~~ 90501	
Received for Laboratory by: [signature]	05/10/16	0910		

130423

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 or estimated value.
*	*	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.

LAB CHRONICLE
ARSENIC BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16E082
Instrument ID : T-IF6

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IME024S8	1	NA	05/19/1617:18	05/16/1615:49	F6E09042	F6E09040	IME024S	Method Blank
LCS1S	IME024SL	1	NA	05/19/1617:22	05/16/1615:49	F6E09043	F6E09040	IME024S	Lab Control Sample (LCS)
CA017-SB04-002MS	E082-12M	0.962	4.8	05/19/1617:27	05/16/1615:49	F6E09044	F6E09040	IME024S	Matrix Spike Sample (MS)
CA017-SB04-002AS	E082-12A	0.966	4.8	05/19/1617:31	05/16/1615:49	F6E09045	F6E09040	IME024S	Analytical Spike Sample
CA017-SB04-002DUP	E082-12D	0.957	4.8	05/19/1617:35	05/16/1615:49	F6E09046	F6E09040	IME024S	Duplicate Sample
CA017-SB04-002	E082-12	0.966	4.8	05/19/1617:40	05/16/1615:49	F6E09047	F6E09040	IME024S	Field Sample
CA017-SB04-002DL	E082-12J	4.83	4.8	05/19/1617:44	05/16/1615:49	F6E09048	F6E09040	IME024S	Diluted Sample
CA017-SB01-001	E082-01	0.976	8.0	05/19/1617:48	05/16/1615:49	F6E09049	F6E09040	IME024S	Field Sample
CA017-SB01-201	E082-02	0.966	7.3	05/19/1617:53	05/16/1615:49	F6E09050	F6E09040	IME024S	Field Sample
CA017-SB01-005	E082-03	0.966	16.7	05/19/1617:58	05/16/1615:49	F6E09051	F6E09040	IME024S	Field Sample
CA017-SB01-010	E082-04	0.962	10.7	05/19/1618:10	05/16/1615:49	F6E09054	F6E09052	IME024S	Field Sample
CA017-SB02-000.5	E082-05	0.971	8.3	05/19/1618:15	05/16/1615:49	F6E09055	F6E09052	IME024S	Field Sample
CA017-SB02-005	E082-06	0.98	10.0	05/19/1618:21	05/16/1615:49	F6E09056	F6E09052	IME024S	Field Sample
CA017-SB02-010	E082-07	0.966	9.0	05/19/1618:27	05/16/1615:49	F6E09057	F6E09052	IME024S	Field Sample
CA017-SB03-001	E082-08	0.98	6.9	05/19/1618:31	05/16/1615:49	F6E09058	F6E09052	IME024S	Field Sample
CA017-SB03-201	E082-09	0.971	7.5	05/19/1618:36	05/16/1615:49	F6E09059	F6E09052	IME024S	Field Sample
CA017-SB03-004.5	E082-10	0.966	6.9	05/19/1618:43	05/16/1615:49	F6E09060	F6E09052	IME024S	Field Sample
CA017-SB03-010	E082-11	0.971	9.6	05/19/1618:48	05/16/1615:49	F6E09061	F6E09052	IME024S	Field Sample
CA017-SB04-005	E082-13	0.962	7.0	05/19/1618:52	05/16/1615:49	F6E09062	F6E09052	IME024S	Field Sample
CA017-SB04-010	E082-14	0.98	10.5	05/19/1618:56	05/16/1615:49	F6E09063	F6E09052	IME024S	Field Sample
CA017-SB05-001	E082-15	0.99	6.7	05/19/1619:09	05/16/1615:49	F6E09066	F6E09064	IME024S	Field Sample
CA017-SB05-005	E082-16	0.98	0.8	05/19/1619:14	05/16/1615:49	F6E09067	F6E09064	IME024S	Field Sample
CA017-SB05-010	E082-17	0.976	11.5	05/19/1619:18	05/16/1615:49	F6E09068	F6E09064	IME024S	Field Sample
CA017-SB06-000.5	E082-18	0.962	6.2	05/19/1619:22	05/16/1615:49	F6E09069	F6E09064	IME024S	Field Sample
CA017-SB06-005	E082-19	0.962	11.1	05/19/1619:27	05/16/1615:49	F6E09070	F6E09064	IME024S	Field Sample
CA017-SB06-010	E082-20	0.98	7.2	05/19/1619:31	05/16/1615:49	F6E09071	F6E09064	IME024S	Field Sample

FN - Filename
% Moist - Percent Moisture

RESULTS SUMMARIES

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-001	Date Analyzed:	05/19/16 17:48
Lab Samp ID:	E082-01	Dilution Factor:	0.976
Lab File ID:	F6E09049	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	8.0
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.73	0.530	0.0530	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-201	Date Analyzed:	05/19/16 17:53
Lab Samp ID:	E082-02	Dilution Factor:	0.966
Lab File ID:	F6E09050	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.3
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.48	0.521	0.0521	0.104

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-005	Date Analyzed:	05/19/16 17:58
Lab Samp ID:	E082-03	Dilution Factor:	0.966
Lab File ID:	F6E09051	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	16.7
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.84	0.580	0.0580	0.116

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-010	Date Analyzed:	05/19/16 18:10
Lab Samp ID:	E082-04	Dilution Factor:	0.962
Lab File ID:	F6E09054	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	10.7
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.47	0.539	0.0539	0.108

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB02-000.5	Date Analyzed:	05/19/16 18:15
Lab Samp ID:	E082-05	Dilution Factor:	0.971
Lab File ID:	F6E09055	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	8.3
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.78	0.529	0.0529	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB02-005	Date Analyzed:	05/19/16 18:21
Lab Samp ID:	E0B2-06	Dilution Factor:	0.98
Lab File ID:	F6E09056	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	10.0
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.15	0.544	0.0544	0.109

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB02-010	Date Analyzed:	05/19/16 18:27
Lab Samp ID:	E082-07	Dilution Factor:	0.966
Lab File ID:	F6E09057	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	9.0
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.37	0.531	0.0531	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-001	Date Analyzed:	05/19/16 18:31
Lab Samp ID:	E082-08	Dilution Factor:	0.98
Lab File ID:	F6E09058	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.9
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.63	0.526	0.0526	0.105

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-201	Date Analyzed:	05/19/16 18:36
Lab Samp ID:	E082-09	Dilution Factor:	0.971
Lab File ID:	F6E09059	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.5
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.83	0.525	0.0525	0.105

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-004.5	Date Analyzed:	05/19/16 18:43
Lab Samp ID:	E082-10	Dilution Factor:	0.966
Lab File ID:	F6E09060	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.9
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.67	0.519	0.0519	0.104

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-010	Date Analyzed:	05/19/16 18:48
Lab Samp ID:	E082-11	Dilution Factor:	0.971
Lab File ID:	F6E09061	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	9.6
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.60	0.537	0.0537	0.107

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB04-002	Date Analyzed:	05/19/16 17:40
Lab Samp ID:	E082-12	Dilution Factor:	0.966
Lab File ID:	F6E09047	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	4.8
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.39	0.507	0.0507	0.101

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB04-005	Date Analyzed:	05/19/16 18:52
Lab Samp ID:	E082-13	Dilution Factor:	0.962
Lab File ID:	F6E09062	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.0
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.22	0.517	0.0517	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB04-010	Date Analyzed:	05/19/16 18:56
Lab Samp ID:	E082-14	Dilution Factor:	0.98
Lab File ID:	F6E09063	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	10.5
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.76	0.547	0.0547	0.109

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB05-001	Date Analyzed:	05/19/16 19:09
Lab Samp ID:	E082-15	Dilution Factor:	0.99
Lab File ID:	F6E09066	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.7
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.65	0.531	0.0531	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB05-005	Date Analyzed:	05/19/16 19:14
Lab Samp ID:	E082-16	Dilution Factor:	0.98
Lab File ID:	F6E09067	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	0.8
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.80	0.494	0.0494	0.0988

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB05-010	Date Analyzed:	05/19/16 19:18
Lab Samp ID:	E082-17	Dilution Factor:	0.976
Lab File ID:	F6E09068	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	11.5
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.32	0.551	0.0551	0.110

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB06-000.5	Date Analyzed:	05/19/16 19:22
Lab Samp ID:	E082-18	Dilution Factor:	0.962
Lab File ID:	F6E09069	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.2
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.65	0.513	0.0513	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB06-005	Date Analyzed:	05/19/16 19:27
Lab Samp ID:	E082-19	Dilution Factor:	0.962
Lab File ID:	F6E09070	Matrix :	SOIL
Ext Batch ID:	IME024S	% Moisture :	11.1
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.47	0.541	0.0541	0.108

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB06-010	Date Analyzed:	05/19/16 19:31
Lab Samp ID:	E082-20	Dilution Factor:	0.98
Lab File ID:	F6E09071	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.2
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.66	0.528	0.0528	0.106

QC SUMMARIES

METHOD BLANK

Method: 6020A

QC Measure: IME024SB

Associated Samples:

CA017-SB04-002
CA017-SB01-001
CA017-SB01-201
CA017-SB01-005
CA017-SB01-010
CA017-SB02-000.5
CA017-SB02-005
CA017-SB02-010
CA017-SB03-001
CA017-SB03-201
CA017-SB03-004.5
CA017-SB03-010
CA017-SB04-005
CA017-SB04-010
CA017-SB05-001
CA017-SB05-005
CA017-SB05-010
CA017-SB06-000.5
CA017-SB06-005
CA017-SB06-010

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/16/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	MBLK1S	Date Analyzed:	05/19/16 17:1B
Lab Samp ID:	IME024SB	Dilution Factor:	1
Lab File ID:	F6E09042	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	NA
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100

LCS/LCSD

Method: 6020A

QC Measure: IME024SL

Associated Samples:

CA017-SB04-002
CA017-SB01-001
CA017-SB01-201
CA017-SB01-005
CA017-SB01-010
CA017-SB02-000.5
CA017-SB02-005
CA017-SB02-010
CA017-SB03-001
CA017-SB03-201
CA017-SB03-004.5
CA017-SB03-010
CA017-SB04-005
CA017-SB04-010
CA017-SB05-001
CA017-SB05-005
CA017-SB05-010
CA017-SB06-000.5
CA017-SB06-005
CA017-SB06-010

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16E082
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME024SB	IME024SL		
LAB FILE ID:	F6E09042	F6E09043		
DATIME EXTRCTD:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	NA
DATIME ANALYZD:	05/19/1617:18	05/19/1617:22	DATE RECEIVED:	05/16/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	21.1	106	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E082
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.966	0.962		
SAMPLE ID:	CA017-SB04-002			
CONTROL NO.:	E082-12	E082-12M		
LAB FILE ID:	F6E09047	F6E09044		
DATIME EXTRCTD:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATIME ANALYZD:	05/19/1617:40	05/19/1617:27	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	3.39	20.2	24.1	102	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E082
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.966	4.83		
SAMPLE ID:	CA017-SB04-002	CA017-SB04-002		
EMAX SAMP ID:	E082-12	E082-12J		
LAB FILE ID:	F6E09047	F6E09048		
DATE EXTRACTED:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATE ANALYZED:	05/19/1617:40	05/19/1617:44	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	3.39	3.35	1	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E082
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.966	0.966		
SAMPLE ID:	CA017-SB04-002			
CONTROL NO.:	E082-12	E082-12A		
LAB FILE ID:	F6E09047	F6E09045		
DATIME EXTRCTD:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATIME ANALYZD:	05/19/1617:40	05/19/1617:31	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	3.39	20.3	24.7	105	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E082
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.966	0.957		
SAMPLE ID:	CA017-SB04-002	CA017-SB04-002		
EMAX SAMP ID:	E082-12	E082-12D		
LAB FILE ID:	F6E09047	F6E09046		
DATE EXTRACTED:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATE ANALYZED:	05/19/1617:40	05/19/1617:35	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	3.39	3.3	2	20

RAW DATA

ARSENIC

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-001	Date Analyzed:	05/19/16 17:48
Lab Samp ID:	E082-01	Dilution Factor:	0.976
Lab File ID:	F6E09049	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	8.0
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.73	0.530	0.0530	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-201	Date Analyzed:	05/19/16 17:53
Lab Samp ID:	E082-02	Dilution Factor:	0.966
Lab File ID:	F6E09050	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.3
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.48	0.521	0.0521	0.104

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-005	Date Analyzed:	05/19/16 17:58
Lab Samp ID:	E082-03	Dilution Factor:	0.966
Lab File ID:	F6E09051	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	16.7
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.84	0.580	0.0580	0.116

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB01-010	Date Analyzed:	05/19/16 18:10
Lab Samp ID:	E082-04	Dilution Factor:	0.962
Lab File ID:	F6E09054	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	10.7
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.47	0.539	0.0539	0.108

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB02-000.5	Date Analyzed:	05/19/16 18:15
Lab Samp ID:	E082-05	Dilution Factor:	0.971
Lab File ID:	F6E09055	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	8.3
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.78	0.529	0.0529	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB02-005	Date Analyzed:	05/19/16 18:21
Lab Samp ID:	E082-06	Dilution Factor:	0.98
Lab File ID:	F6E09056	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	10.0
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.15	0.544	0.0544	0.109

METHOO SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Oate Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB02-010	Date Analyzed:	05/19/16 18:27
Lab Samp ID:	E082-07	Dilution Factor:	0.966
Lab File ID:	F6E09057	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	9.0
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.37	0.531	0.0531	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-001	Date Analyzed:	05/19/16 18:31
Lab Samp ID:	E082-08	Dilution Factor:	0.98
Lab File ID:	F6E09058	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.9
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.63	0.526	0.0526	0.105

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-201	Date Analyzed:	05/19/16 18:36
Lab Samp ID:	E082-09	Dilution Factor:	0.971
Lab File ID:	F6E09059	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.5
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.83	0.525	0.0525	0.105

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-004.5	Date Analyzed:	05/19/16 18:43
Lab Samp ID:	E082-10	Dilution Factor:	0.966
Lab File ID:	F6E09060	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.9
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.67	0.519	0.0519	0.104

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB03-010	Date Analyzed:	05/19/16 18:48
Lab Samp ID:	E082-11	Dilution Factor:	0.971
Lab File ID:	F6E09061	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	9.6
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.60	0.537	0.0537	0.107

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB04-002	Date Analyzed:	05/19/16 17:40
Lab Samp ID:	E082-12	Dilution Factor:	0.966
Lab File ID:	F6E09047	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	4.8
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.39	0.507	0.0507	0.101

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB04-005	Date Analyzed:	05/19/16 18:52
Lab Samp ID:	E082-13	Dilution Factor:	0.962
Lab File ID:	F6E09062	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.0
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.22	0.517	0.0517	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB04-010	Date Analyzed:	05/19/16 18:56
Lab Samp ID:	E082-14	Dilution Factor:	0.98
Lab File ID:	F6E09063	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	10.5
Calib. Ref.:	F6E09052	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.76	0.547	0.0547	0.109

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB05-001	Date Analyzed:	05/19/16 19:09
Lab Samp ID:	E082-15	Dilution Factor:	0.99
Lab File ID:	F6E09066	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.7
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.65	0.531	0.0531	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB05-005	Date Analyzed:	05/19/16 19:14
Lab Samp ID:	E082-16	Dilution Factor:	0.98
Lab File ID:	F6E09067	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	0.8
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.80	0.494	0.0494	0.0988

METHOO SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB05-010	Date Analyzed:	05/19/16 19:18
Lab Samp ID:	E082-17	Dilution Factor:	0.976
Lab File ID:	F6E09068	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	11.5
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.32	0.551	0.0551	0.110

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB06-000.5	Date Analyzed:	05/19/16 19:22
Lab Samp ID:	E082-18	Dilution Factor:	0.962
Lab File ID:	F6E09069	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	6.2
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	3.65	0.513	0.0513	0.103

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB06-005	Date Analyzed:	05/19/16 19:27
Lab Samp ID:	E082-19	Dilution Factor:	0.962
Lab File ID:	F6E09070	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	11.1
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	4.47	0.541	0.0541	0.108

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/08/16
Project	: CANNON AFB PBR	Date Received:	05/10/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	CA017-SB06-010	Date Analyzed:	05/19/16 19:31
Lab Samp ID:	E082-20	Dilution Factor:	0.98
Lab File ID:	F6E09071	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	7.2
Calib. Ref.:	F6E09064	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	2.66	0.528	0.0528	0.106

METHOD SW6020A
ARSENIC BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	05/16/16
SDG NO.	: 16E082	Date Extracted:	05/16/1615:49
Sample ID:	MBLK1S	Date Analyzed:	05/19/16 17:18
Lab Samp ID:	IME024SB	Dilution Factor:	1
Lab File ID:	F6E09042	Matrix :	SOIL
Ext Btch ID:	IME024S	% Moisture :	NA
Calib. Ref.:	F6E09040	Instrument ID :	T-IF6

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Arsenic	ND	0.500	0.0500	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E082
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1S			
CONTROL NO.:	IME024SB	IME024SL		
LAB FILE ID:	F6E09042	F6E09043		
DATIME EXTRCTD:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	NA
DATIME ANALYZD:	05/19/1617:18	05/19/1617:22	DATE RECEIVED:	05/16/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Arsenic	ND	20.0	21.1	106	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E082
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.966	0.962		
SAMPLE ID:	CA017-SB04-002			
CONTROL NO.:	E082-12	E082-12M		
LAB FILE ID:	F6E09047	F6E09044		
DATIME EXTRCTD:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATIME ANALYZD:	05/19/1617:40	05/19/1617:27	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	QC LIMIT (%)
Arsenic	3.39	20.2	24.1	102	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E082
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.966	4.83		
SAMPLE ID:	CA017-SB04-002	CA017-SB04-002		
EMAX SAMP ID:	E082-12	E082-12J		
LAB FILE ID:	F6E09047	F6E09048		
DATE EXTRACTED:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATE ANALYZED:	05/19/1617:40	05/19/1617:44	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	3.39	3.35	1	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT:	URS CORPORATION
PROJECT:	CANNON AFB PBR
SDG NO.:	16E082
METHOD:	SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILTN FACTR:	0.966	0.966		
SAMPLE ID:	CA017-SB04-002			
CONTROL NO.:	E082-12	E082-12A		
LAB FILE ID:	F6E09047	F6E09045		
DATIME EXTRCTD:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATIME ANALYZD:	05/19/1617:40	05/19/1617:31	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	3.39	20.3	24.7	105	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16E082
METHOD: SW6020A

MATRIX:	SOIL		% MOISTURE:	4.8
DILUTION FACTOR:	0.966	0.957		
SAMPLE ID:	CA017-SB04-002	CA017-SB04-002		
EMAX SAMP ID:	E082-12	E082-12D		
LAB FILE ID:	F6E09047	F6E09046		
DATE EXTRACTED:	05/16/1615:49	05/16/1615:49	DATE COLLECTED:	05/08/16
DATE ANALYZED:	05/19/1617:40	05/19/1617:35	DATE RECEIVED:	05/10/16
PREP. BATCH:	IME024S	IME024S		
CALIB. REF:	F6E09040	F6E09040		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	DUPL RSLT (mg/kg)	RPD RSLT %	QC LIMIT (%)
Arsenic	3.39	3.3	2	20

ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 5/19/16 14:31

End Date: 5/19/16 19:57

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

QC ok

CCV7, CCV8 → ↓Tl; the three samples bracketed by CCV7 & CCB8.

Book #: AF6-015

Instrument No.: F6

Analytical Batch: F6E09

Analytical Sequence: F6E09

Method File: EMAX 6020H

Micropipette ID: ☐ 142781004

Micropipette ID: ☐ ICP-06

Micropipette ID: ☐ 339362028

Micropipette ID: ☐ GFAA-07

Micropipette ID: ☑ 339342032, 542761827, 542780615

SOP #	Rev. #
☑ EMAX-6020	9
☐ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B, 009. 78.07	MRL1 1	SM6B, 009.80.03
S1	,78.08	MRL2 0.5	↓ ,80.04
S2	↓ ,79.01	MRL3 CAT	↓ ,80.06
S3	↓ ,79.02	MRL4	NA
S4	↓ ,79.03	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B, 009.68.07
S7	↓	Post-Spike 1	SM6A, 007.03.05
ICV	SM6B, 009. 71.03	Post-Spike 2	↓ ,03.06
CCV	,79.04	Post-Spike 3	NA
ICSA	,80.01	Post-Spike 4	↓
ICSAB	,80.02		
6020 TUNE SOLN.	,80.07		
200.8 TUNE SOLN.	,80.08		

Analyzed By: MMM

Date: 5/19/16

SEQUENCE FILE : IF6E09

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
F6E09003	BLNK	14:31	05/19/16	1.00
F6E09004	S0	14:36	05/19/16	1.00
F6E09005	S1 0.5	14:40	05/19/16	1.00
F6E09006	S2 50	14:44	05/19/16	1.00
F6E09007	S3 250	14:49	05/19/16	1.00
F6E09008	S4 500	14:53	05/19/16	1.00
F6E09009	ICV	14:57	05/19/16	1.00
F6E09010	ICB	15:00	05/19/16	1.00
F6E09011	MRLE1904	15:05	05/19/16	1.00
F6E09012	MRLE1905	15:09	05/19/16	1.00
F6E09013	ICSA	15:13	05/19/16	1.00
F6E09014	ICSAB	15:18	05/19/16	1.00
F6E09015	MRLE1906	15:23	05/19/16	1.00
F6E09016	CCV1	15:27	05/19/16	1.00
F6E09017	CCB1	15:31	05/19/16	1.00
F6E09018	IME027SB	15:35	05/19/16	1.00
F6E09019	IME027SL	15:40	05/19/16	1.00
F6E09020	E081-12M	15:44	05/19/16	1.00
F6E09021	E081-12A	15:48	05/19/16	1.00
F6E09022	E081-12D	15:52	05/19/16	1.00
F6E09023	E081-12	15:57	05/19/16	1.00
F6E09024	E081-12J	16:01	05/19/16	5.00
F6E09025	E081-01	16:05	05/19/16	1.00
F6E09026	E081-02	16:10	05/19/16	1.00
F6E09027	E081-03	16:14	05/19/16	1.00
F6E09028	CCV2	16:18	05/19/16	1.00
F6E09029	CCB2	16:22	05/19/16	1.00
F6E09030	E081-04	16:27	05/19/16	1.00
F6E09031	E081-05	16:31	05/19/16	1.00
F6E09032	E081-06	16:35	05/19/16	1.00
F6E09033	E081-07	16:39	05/19/16	1.00
F6E09034	E081-08	16:44	05/19/16	1.00
F6E09035	E081-09	16:48	05/19/16	1.00
F6E09036	E081-10	16:52	05/19/16	1.00
F6E09037	E081-11	16:57	05/19/16	1.00
F6E09038	E081-13	17:01	05/19/16	1.00
F6E09039	E081-14	17:05	05/19/16	1.00
F6E09040	CCV3	17:10	05/19/16	1.00
F6E09041	CCB3	17:14	05/19/16	1.00
F6E09042	IME024SB	17:18	05/19/16	1.00
F6E09043	IME024SL	17:22	05/19/16	1.00
F6E09044	E082-12M	17:27	05/19/16	1.00
F6E09045	E082-12A	17:31	05/19/16	1.00
F6E09046	E082-12D	17:35	05/19/16	1.00
F6E09047	E082-12	17:40	05/19/16	1.00
F6E09048	E082-12J	17:44	05/19/16	5.00
F6E09049	E082-01	17:48	05/19/16	1.00
F6E09050	E082-02	17:53	05/19/16	1.00
F6E09051	E082-03	17:58	05/19/16	1.00
F6E09052	CCV4	18:02	05/19/16	1.00
F6E09053	CCB4	18:06	05/19/16	1.00

F6E09054	E082-04	18:10	05/19/16	1.00
F6E09055	E082-05	18:15	05/19/16	1.00
F6E09056	E082-06	18:21	05/19/16	1.00
F6E09057	E082-07	18:27	05/19/16	1.00
F6E09058	E082-08	18:31	05/19/16	1.00
F6E09059	E082-09	18:36	05/19/16	1.00
F6E09060	E082-10	18:43	05/19/16	1.00
F6E09061	E082-11	18:48	05/19/16	1.00
F6E09062	E082-13	18:52	05/19/16	1.00
F6E09063	E082-14	18:56	05/19/16	1.00
F6E09064	CCV5	19:01	05/19/16	1.00
F6E09065	CCB5	19:05	05/19/16	1.00
F6E09066	E082-15	19:09	05/19/16	1.00
F6E09067	E082-16	19:14	05/19/16	1.00
F6E09068	E082-17	19:18	05/19/16	1.00
F6E09069	E082-18	19:22	05/19/16	1.00
F6E09070	E082-19	19:27	05/19/16	1.00
F6E09071	E082-20	19:31	05/19/16	1.00
F6E09072	E083-01	19:35	05/19/16	1.00
F6E09073	E083-02	19:40	05/19/16	1.00
F6E09074	E083-03	19:44	05/19/16	1.00
F6E09075	E083-04	19:48	05/19/16	1.00
F6E09076	CCV6	19:53	05/19/16	1.00
F6E09077	CCB6	19:57	05/19/16	1.00

SDG : 16E082 UNIT : % ICPMS CHECK : IF6E09 DATE : 05/19/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	104	109	104	98	95	99	105	98	100	103	99	102	101	100	98	94	99	97	100	100	99	101	108	103	112*	101	102	102	106	91	98	98	98
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE1904	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE1905	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	96	91	96	----	103	101	101	111	----	----	----	97	----	----	----	----	----	----	----	----	106	----	----	----	----	----	----	----	----	----
ICSA8	113	117	106	93	88	94	101	100	99	98	112	106	107	101	98	95	102	101	103	108	111	99	50*	108	102	97	99	104	103	98	95	94	96
MRLE1906	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	108	114*	107	92	92	96	98	99	100	98	100	104	103	102	100	99	104	105	101	103	101	103	111*	105	104	102	104	102	103	100	99	103	102
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME027SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME027SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	102	104	99	97	93	97	104	100	102	102	99	104	101	99	99	95	100	100	101	102	100	102	110	109	108	104	102	103	105	98	97	99	97
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	102	105	102	102	96	99	108	101	103	104	99	103	99	101	95	95	97	97	102	103	99	101	108	111*	108	104	101	101	103	96	94	97	89*
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME024SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME024SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	111*	112*	107	98	95	99	106	102	107	103	99	103	100	100	96	93	98	98	101	103	99	101	109	111*	108	99	103	101	103	93	91	92	86*
CCB4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

E082-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	112*	113*	110	97	96	99	106	103	108	103	98	103	101	98	96	91	97	96	98	103	98	102	110	112*	106	96	102	101	102	88*	93	88*	82*
CCB5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	114*	110	108	101	97	100	109	103	109	103	97	103	99	97	95	90	95	96	96	104	98	104	108	111*	105	96	102	101	100	87*	92	86*	79*
CCB6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

SDG : 16E082 UNIT : UG/L SUMMARY of CALIBRATION BLANKS : IF6E09 (SOIL) DATE : 05/19/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	-.021	.003	.314	2.47	.203	.198	.650	-2.68	-3.05	-1.68	-.003	-.056	-.023	.029	3.16	.006	.010	.021	-.033	.032	.076	-.005	.010	.107	.001	.007	.077	.037	.007	.025	.025	.006	.020
MRLE1904	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE1905	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	1.14	.008	.737	----	----	----	6.31	----	----	----	----	.089	1.33	.325	----	.281	.298	.923	2.54	.233	.064	.626	.127	----	.026	.333	.044	.055	.109	.135	.004	.201	.004
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLE1906	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	.651	.003	.285	4.23	.493	-.084	-.026	-1.88	.114	-2.25	-.009	-.006	-.023	.001	2.73	.003	.006	.013	.001	.014	.053	-.005	.003	.124	.000	.004	.040	.188	.007	.013	.005	.000	.012
IME027SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME027SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-12J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.049	-.000	.177	-2.17	.031	-.087	1.33	-1.34	7.00	-.801	-.010	.028	-.022	-.003	2.52	.000	.005	-.004	-.009	.030	.045	-.006	.003	.065	.001	.003	.036	.236	.012	.011	.004	.000	.009
E081-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E081-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	.009	-.002	.250	-4.16	.525	.334	1.46	.069	17.9	2.67	.011	.089	-.008	.019	2.96	.003	.012	.027	.707	.039	.044	.000	.005	.066	.000	.002	.035	.189	.026	.008	.004	.004	.010
IME024SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IME024SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-12J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB4	.408	-.002	.254	-5.29	1.03	.241	2.53	.217	30.2	2.16	.018	.125	-.005	.018	3.05	.004	.020	.022	.730	.047	.040	-.002	.004	.062	.001	.003	.036	.160	.021	.010	.004	.002	.009

E082-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB5	.650	.003	.315	-6.16	.773	.333	1.72	.816	40.2	2.48	.003	.153	-.014	.019	2.93	.003	.010	.019	.704	.045	.038	.001	.006	.066	.000	.005	.038	.134	.019	.010	.006	.004	.012
E082-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E082-20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
E083-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB6	.638	-.002	.296	-6.64	1.02	.569	1.68	2.52	53.9	4.51	.019	.243	-.008	.035	3.29	.007	.013	.018	.730	.057	.057	.005	.005	.061	.000	.002	.041	.130	.021	.007	.006	.000	.010

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E09001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E09002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	F6E09003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1201	F6E09004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	F6E09005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	F6E09006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	F6E09007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	F6E09008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	F6E09009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1201	F6E09010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	F6E09011	MRLE1904	0.5/50/4 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6E09012	MRLE1905	1/100/10 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	F6E09013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	F6E09014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	F6E09015	MRLE1906	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2209	F6E09018	IME027SB		1.000				
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2210	F6E09019	IME027SL		1.000				
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2211	F6E09020	E081-12M		1.000				
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2212	F6E09021	E081-12A		1.000				
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2301	F6E09022	E081-12D		1.000				
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2302	F6E09023	E081-12		1.000				
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2303	F6E09024	E081-12J		5.000				
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2304	F6E09025	E081-01		1.000				
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2305	F6E09026	E081-02		1.000				
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2306	F6E09027	E081-03		1.000				
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09028	CCV2		1.000				
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09029	CCB2		1.000				
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2307	F6E09030	E081-04		1.000				
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2308	F6E09031	E081-05		1.000				
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2309	F6E09032	E081-06		1.000				
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2310	F6E09033	E081-07		1.000				
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2311	F6E09034	E081-08		1.000				
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2312	F6E09035	E081-09		1.000				
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2401	F6E09036	E081-10		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
42	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2402	F6E09037	E081-11		1.000				
43	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2403	F6E09038	E081-13		1.000				
44	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2404	F6E09039	E081-14		1.000				
45	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09040	CCV3		1.000				
46	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09041	CCB3		1.000				
47	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2405	F6E09042	IME024SB		1.000				
48	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2406	F6E09043	IME024SL		1.000				
49	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2407	F6E09044	E082-12M		1.000				
50	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2408	F6E09045	E082-12A		1.000				
51	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2409	F6E09046	E082-12D		1.000				
52	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2410	F6E09047	E082-12		1.000				
53	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2411	F6E09048	E082-12J		5.000				
54	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2412	F6E09049	E082-01		1.000				
55	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2501	F6E09050	E082-02		1.000				
56	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2502	F6E09051	E082-03		1.000				
57	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09052	CCV4		1.000				
58	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09053	CCB4		1.000				
59	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2503	F6E09054	E082-04		1.000				
60	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2504	F6E09055	E082-05		1.000				
61	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2505	F6E09056	E082-06		1.000				
62	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2506	F6E09057	E082-07		1.000				
63	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2507	F6E09058	E082-08		1.000				
64	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2508	F6E09059	E082-09		1.000				
65	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2509	F6E09060	E082-10		1.000				
66	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2510	F6E09061	E082-11		1.000				
67	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2511	F6E09062	E082-13		1.000				
68	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2512	F6E09063	E082-14		1.000				
69	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09064	CCV5		1.000				
70	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09065	CCB5		1.000				
71	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3101	F6E09066	E082-15		1.000				
72	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3102	F6E09067	E082-16		1.000				
73	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3103	F6E09068	E082-17		1.000				
74	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3104	F6E09069	E082-18		1.000				
75	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3105	F6E09070	E082-19		1.000				
76	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3106	F6E09071	E082-20		1.000				
77	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3107	F6E09072	E083-01		1.000				
78	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3108	F6E09073	E083-02		1.000				
79	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3109	F6E09074	E083-03		1.000				
80	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3110	F6E09075	E083-04		1.000				
81	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09076	CCV6		1.000				
82	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09077	CCB6		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
83	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	3111	F6E09078	IME028SB		1.000				
84	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	3112	F6E09079	IME028SL		1.000				
85	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3201	F6E09080	E083-10M		1.000				
86	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3202	F6E09081	E083-10A		1.000				
87	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3203	F6E09082	E083-10D		1.000				
88	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3204	F6E09083	E083-10		1.000				
89	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3205	F6E09084	E083-10J		5.000				
90	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3206	F6E09085	E083-05		1.000				
91	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3207	F6E09086	E083-06		1.000				
92	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3208	F6E09087	E083-07		1.000				
93	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09088	CCV7	↓↑	1.000				
94	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09089	CCB7		1.000				
95	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3209	F6E09090	E083-08		1.000				
96	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3210	F6E09091	E083-09		1.000				
97	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3211	F6E09092	E083-11		1.000				
98	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3212	F6E09093	E083-12		1.000				
99	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3301	F6E09094	E083-13		1.000				
100	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3302	F6E09095	E083-14		1.000				
101	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6E09100	CCV8	↓↑	1.000				
102	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1201	F6E09101	CCB8		1.000				
103		Keyword		StandBy							
104		Keyword		SMPLEND	End of SMPL						
105		Keyword		End	End of Sequence						
106		Keyword		CCVBEG	Start of CCV						
107		Keyword		CCVEND	End of CCV						
108		Keyword		BLKBEG	Start of BLANK						
109		Keyword		BLKEND	End of BLANK						
110		Keyword		ERRBEG	Start of ERRTERM						
111		Keyword		ERREND	End of ERRTERM						

Last Calib: May 19, 2016 02:55 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62016\e\if6e09.b\f6e09004.d\f6e09004.d#	S0	May 19 2016 02:36 pm
2	c:\data\if62016\e\if6e09.b\f6e09005.d\f6e09005.d#	S1 0.5	May 19 2016 02:40 pm
3	c:\data\if62016\e\if6e09.b\f6e09006.d\f6e09006.d#	S2 50	May 19 2016 02:44 pm
4	c:\data\if62016\e\if6e09.b\f6e09007.d\f6e09007.d#	S3 250	May 19 2016 02:49 pm
5	c:\data\if62016\e\if6e09.b\f6e09008.d\f6e09008.d#	S4 500	May 19 2016 02:53 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

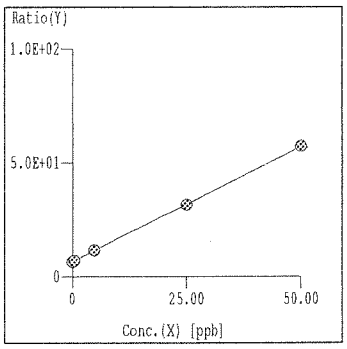
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

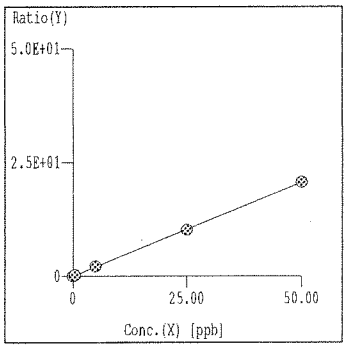
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(3)	7	Li	6	ppb



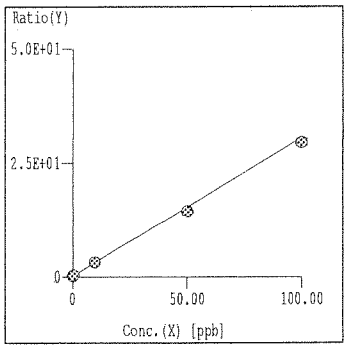
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.015E+000*X +6.390E+000
X = 9.857E-001*Y -6.299E+000
DL = 2.459E-01 ppb
BEC = 6.299 ppb

Step	Mass	Element	ISTD	Unit
(3)	9	Be	6	ppb



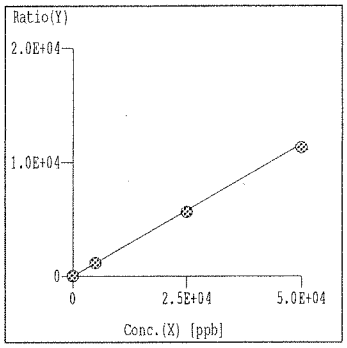
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.121E-001*X +3.820E-003
X = 2.427E+000*Y -9.271E-003
DL = 9.085E-03 ppb
BEC = 9.271E-03 ppb

Step	Mass	Element	ISTD	Unit
(3)	11	B	6	ppb



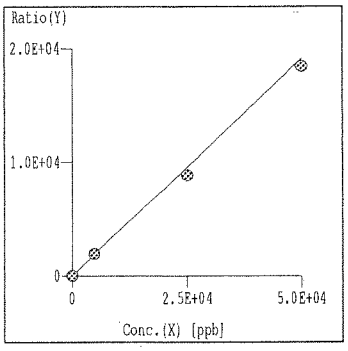
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.048E-001*X +1.379E-001
X = 3.281E+000*Y -4.524E-001
DL = 6.082E-02 ppb
BEC = 4.524E-01 ppb

Step	Mass	Element	ISTD	Unit
(1)	23	Na	45	ppb



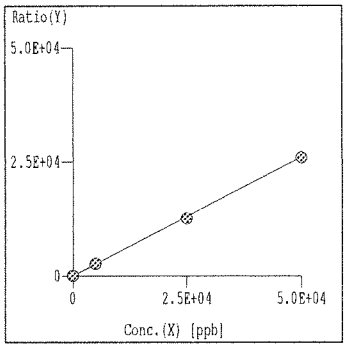
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.321E-001*X +4.011E+000
X = 4.308E+000*Y -1.728E+001
DL = 3.888E-01 ppb
BEC = 17.28 ppb

Step	Mass	Element	ISTD	Unit
(3)	24	Mg	45	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 3.828E-001*X +3.669E-001
X = 2.613E+000*Y -9.585E-001
DL = 3.060E-01 ppb
BEC = 9.585E-01 ppb

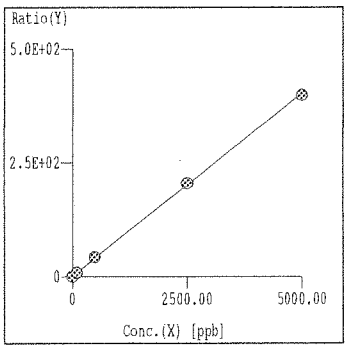
Step	Mass	Element	ISTD	Unit
(3)	27	Al	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 5.221E-001*X +4.034E-001
X = 1.915E+000*Y -7.727E-001
DL = 3.058E-01 ppb
BEC = 7.727E-01 ppb

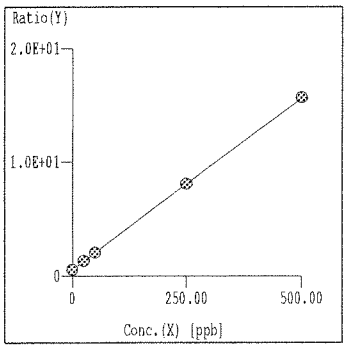
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(1)	28	Si	45	ppb



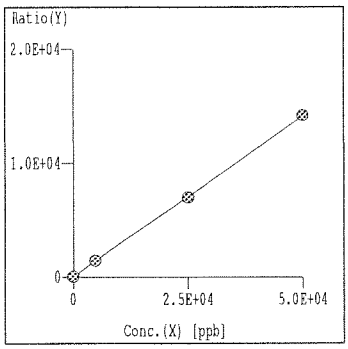
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.059E-002*X +1.473E-001
X = 1.241E+001*Y -1.827E+000
DL = 3.785E-01 ppb
BEC = 1.827 ppb

Step	Mass	Element	ISTD	Unit
(3)	31	P	45	ppb



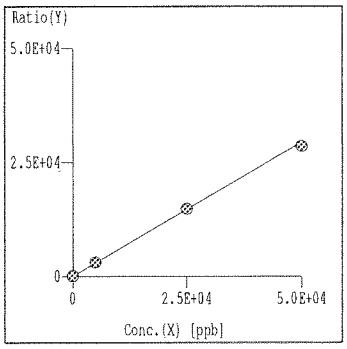
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.013E-002*X +5.454E-001
X = 3.319E+001*Y -1.810E+001
DL = 1.654 ppb
BEC = 18.10 ppb

Step	Mass	Element	ISTD	Unit
(2)	39	K	45	ppb



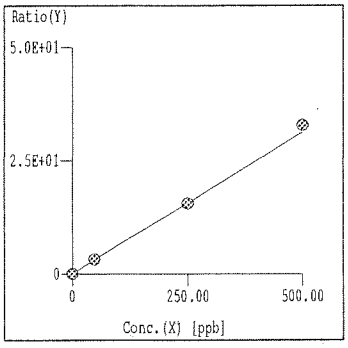
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.823E-001*X +2.312E+001
X = 3.542E+000*Y -8.190E+001
DL = 3.267 ppb
BEC = 81.90 ppb

Step	Mass	Element	ISTD	Unit
(1)	40	Ca	45	ppb



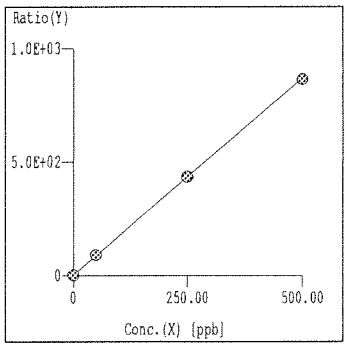
Curve Fit: Y=aX+b
r = 0.9998
Y = 5.894E-001*X +5.403E+000
X = 1.697E+000*Y -9.166E+000
DL = 4.614E-01 ppb
BEC = 9.166 ppb

Step	Mass	Element	ISTD	Unit
(3)	47	Ti	45	ppb



Curve Fit: Y=aX+b
r = 0.9996
Y = 6.262E-002*X +3.843E-003
X = 1.597E+001*Y -6.137E-002
DL = 4.378E-02 ppb
BEC = 6.137E-02 ppb

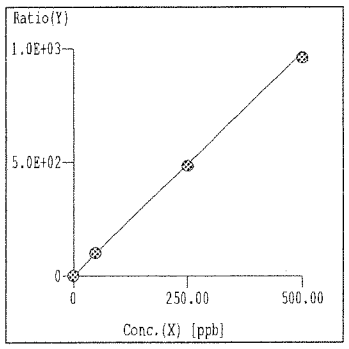
Step	Mass	Element	ISTD	Unit
(2)	51	V	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.738E+000*X +1.037E+000
X = 5.754E-001*Y -5.966E-001
DL = 3.457E-02 ppb
BEC = 5.966E-01 ppb

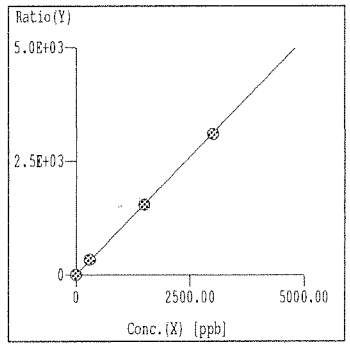
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(2)	52	Cr	45	ppb



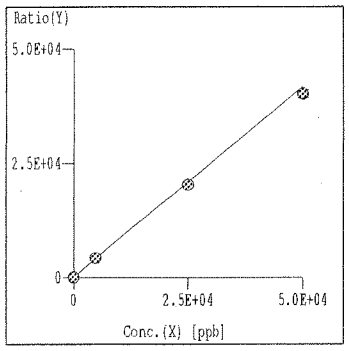
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.968E+000*X +2.641E-001
X = 5.082E-001*Y -1.342E-001
DL = 1.651E-02 ppb
BEC = 1.342E-01 ppb

Step	Mass	Element	ISTD	Unit
(3)	55	Mn	45	ppb



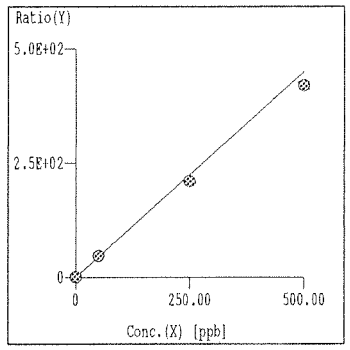
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.040E+000*X +8.173E-002
X = 9.617E-001*Y -7.860E-002
DL = 1.658E-02 ppb
BEC = 7.860E-02 ppb

Step	Mass	Element	ISTD	Unit
(1)	56	Fe	45	ppb



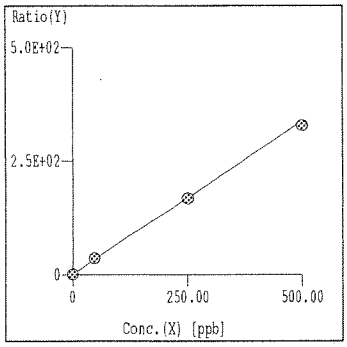
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.378E-001*X +5.423E-001
X = 1.194E+000*Y -6.473E-001
DL = 8.354E-02 ppb
BEC = 6.473E-01 ppb

Step	Mass	Element	ISTD	Unit
(3)	59	Co	45	ppb



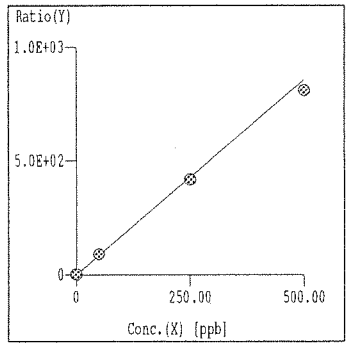
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.999E-001*X +8.184E-003
X = 1.111E+000*Y -9.094E-003
DL = 3.652E-03 ppb
BEC = 9.094E-03 ppb

Step	Mass	Element	ISTD	Unit
(2)	60	Ni	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.760E-001*X +9.458E-003
X = 1.479E+000*Y -1.399E-002
DL = 1.701E-03 ppb
BEC = 1.399E-02 ppb

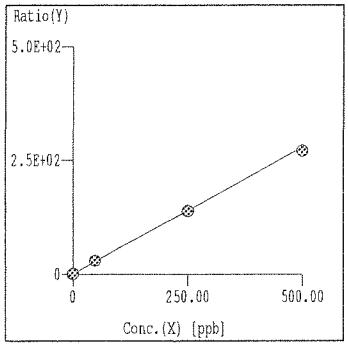
Step	Mass	Element	ISTD	Unit
(2)	63	Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.713E+000*X +3.151E-001
X = 5.838E-001*Y -1.840E-001
DL = 1.351E-02 ppb
BEC = 1.840E-01 ppb

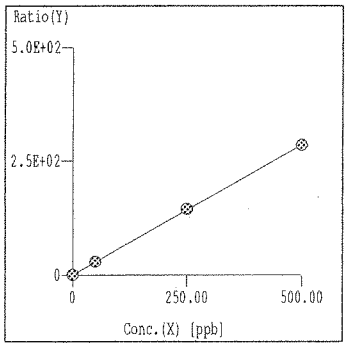
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 66 Zn	72	ppb



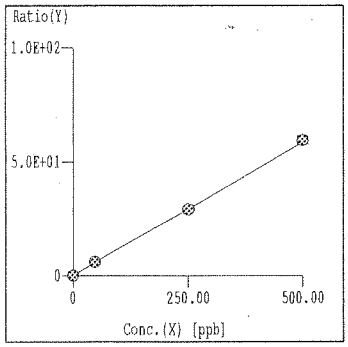
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.583E-001*X +2.077E-001
X = 1.791E+000*Y -3.721E-001
DL = 1.264E-03 ppb
BEC = 3.721E-01 ppb

Step Mass Element	ISTD	Unit
(2) 75 As	72	ppb



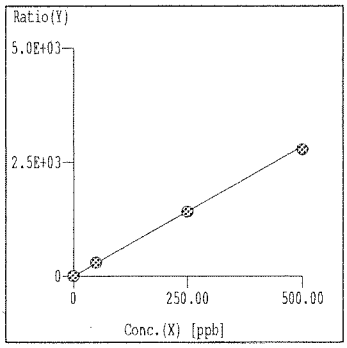
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.713E-001*X +5.005E-002
X = 1.750E+000*Y -8.761E-002
DL = 1.076E-02 ppb
BEC = 8.761E-02 ppb

Step Mass Element	ISTD	Unit
(1) 78 Se	72	ppb



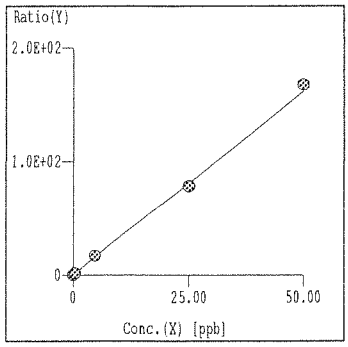
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.175E-001*X +1.309E-003
X = 8.514E+000*Y -1.114E-002
DL = 9.582E-03 ppb
BEC = 1.114E-02 ppb

Step Mass Element	ISTD	Unit
(3) 88 Sr	72	ppb



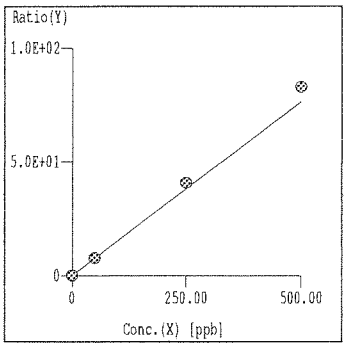
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.717E+000*X +1.658E-001
X = 1.749E-001*Y -2.900E-002
DL = 5.992E-03 ppb
BEC = 2.900E-02 ppb

Step Mass Element	ISTD	Unit
(3) 90 Zr	72	ppb



Curve Fit: Y=aX+b
r = 0.9994
Y = 3.234E+000*X +2.796E-002
X = 3.092E-001*Y -8.643E-003
DL = 3.696E-03 ppb
BEC = 8.643E-03 ppb

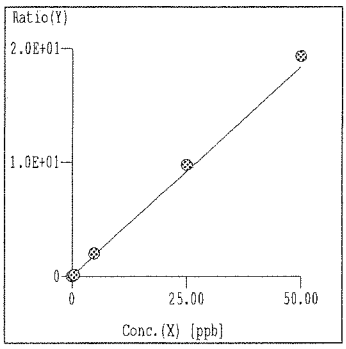
Step Mass Element	ISTD	Unit
(3) 95 Mo	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.529E-001*X +1.026E-003
X = 6.539E+000*Y -6.707E-003
DL = 2.583E-03 ppb
BEC = 6.707E-03 ppb

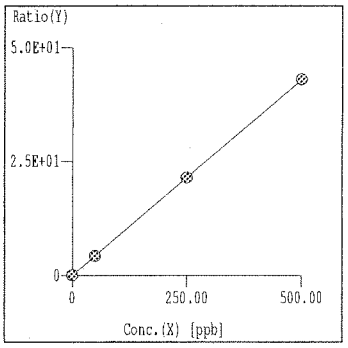
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 107 Ag 115 ppb



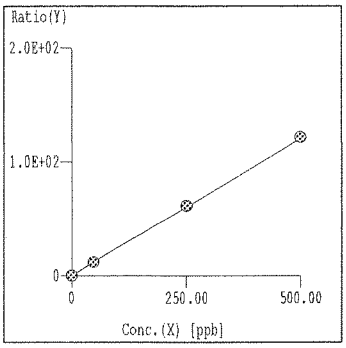
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.688E-001*X +4.693E-004
X = 2.712E+000*Y -1.273E-003
DL = 8.176E-04 ppb
BEC = 1.273E-03 ppb

Step Mass Element ISTD Unit
(3) 111 Cd 115 ppb



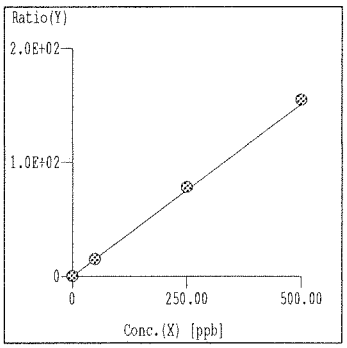
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.582E-002*X +2.406E-004
X = 1.165E+001*Y -2.804E-003
DL = 7.852E-03 ppb
BEC = 2.804E-03 ppb

Step Mass Element ISTD Unit
(3) 118 Sn 115 ppb



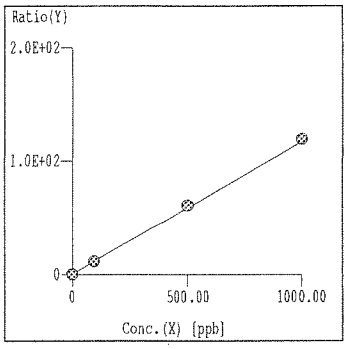
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.411E-001*X +2.396E-003
X = 4.147E+000*Y -9.938E-003
DL = 4.233E-03 ppb
BEC = 9.938E-03 ppb

Step Mass Element ISTD Unit
(3) 121 Sb 115 ppb



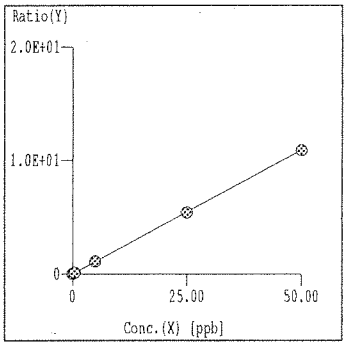
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.023E-001*X +1.072E-002
X = 3.308E+000*Y -3.544E-002
DL = 1.758E-02 ppb
BEC = 3.544E-02 ppb

Step Mass Element ISTD Unit
(3) 137 Ba 115 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.170E-001*X +2.146E-003
X = 8.544E+000*Y -1.834E-002
DL = 2.966E-02 ppb
BEC = 1.834E-02 ppb

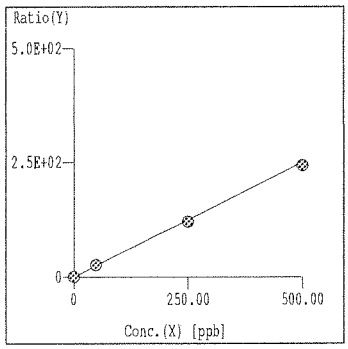
Step Mass Element ISTD Unit
(3) 182 W 159 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.186E-001*X +1.880E-003
X = 4.574E+000*Y -8.598E-003
DL = 6.089E-03 ppb
BEC = 8.598E-03 ppb

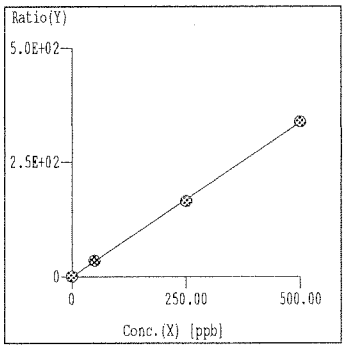
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



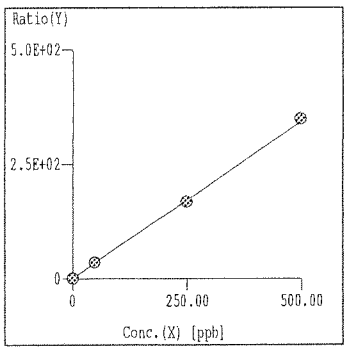
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.992E-001*X +2.614E-003
X = 2.003E+000*Y -5.236E-003
DL = 2.176E-03 ppb
BEC = 5.236E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.745E-001*X +1.397E-002
X = 1.482E+000*Y -2.071E-002
DL = 5.075E-03 ppb
BEC = 2.071E-02 ppb

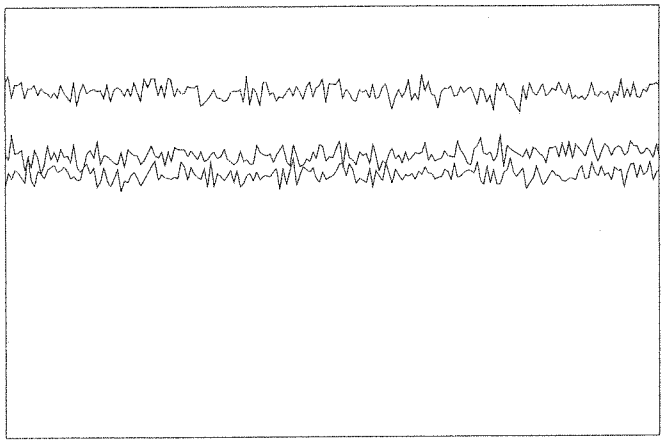
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 6.879E-001*X +1.878E-003
X = 1.454E+000*Y -2.730E-003
DL = 4.537E-04 ppb
BEC = 2.730E-03 ppb

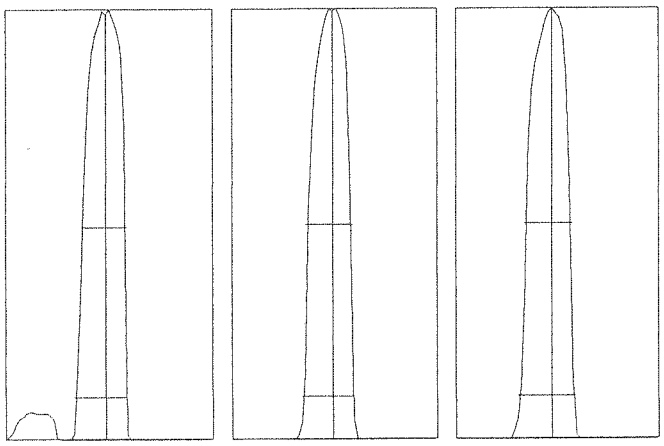
Tune Report

Tune File : NORM.U
Comment : IF6E08/IF6 E09 mm 5/19/16



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.587%
Doubly Charged:	70/140	1.065%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	12920.0	13129.1	2.58	3.70
89	100,000	61742.0	61005.5	2.69	4.70
205	50,000	40672.0	40093.3	2.17	10.70
156/140	5	1.596%	1.693%	5.46	
70/140	2	1.023%	1.172%	5.31	



m/z:	7	89	205
Height:	13,158	61,790	40,661
Axis:	7.00	89.00	204.95
W-50%:	0.65	0.70	0.70
W-10%:	0.7500	0.7500	0.8500

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : May 19, 2016 10:14:49
Printed : May 19, 2016 10:14:52

Tune Report

Tune File : NORM.U
Comment : IF6E08

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1.4 mm	Omega Lens-ce	:	1.8 V	Axis Offset	:	-0.02
Torch-V	:	-0.1 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.15 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2010 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1040 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

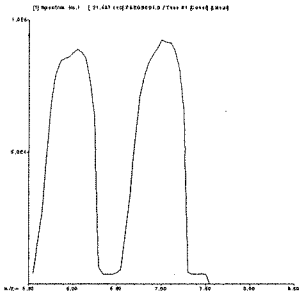
Generated : May 19, 2016 10:14:49
Printed : May 19, 2016 10:14:55

6020 QC Tune Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09001.D
Date Acquired:	May 19 2016 02:23 pm
Acq. Method:	TN6020_C.M
Operator:	MMendo
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	1.12	5.00	
59 Co	1.07	5.00	
115 In	1.13	5.00	
205 Tl	1.10	5.00	



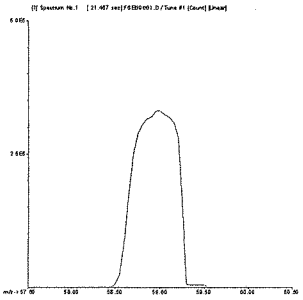
7 Li

Mass Calib.

Actual: 7.05
Required: 6.90 - 7.10
Flag:

Peak Width-10%

Actual: 0.65
Limit 0.90
Flag:



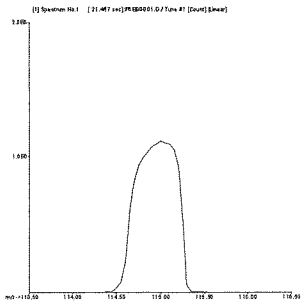
59 Co

Mass Calib.

Actual: 59.00
Required: 58.90 - 59.10
Flag:

Peak Width-10%

Actual: 0.65
Limit 0.90
Flag:



115 In

Mass Calib.

Actual: 115.00

Required: 114.90 - 115.10

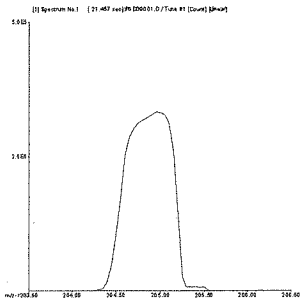
Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 204.95

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09003
Date Acquired:	May 19 2016 02:31 pm
Operator:	MMendo
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H
Last Cal Update:	May 19 2016 02:34 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	815056.31	A	2520.00	0.31
7	Li	52366.23	P	214.30	0.41
9	Be	48.89	P	12.62	25.81
11	B	2803.69	P	96.86	3.45
23	Na	86774.81	P	1023.00	1.18
24	Mg	10958.79	P	262.10	2.39
27	Al	17757.73	P	353.00	1.99
28	Si	4809.85	P	78.24	1.63
31	P	19058.28	P	25.71	0.13
39	K	114676.50	P	637.80	0.56
40	Ca	115196.70	P	2158.00	1.87
45	Sc	2190730.00	A	30580.00	1.40
45	Sc	501390.19	P	6436.00	1.28
45	Sc	3485491.00	A	59980.00	1.72
47	Ti	176.67	P	6.67	3.77
51	V	5475.29	P	90.07	1.65
52	Cr	1337.40	P	34.46	2.58
55	Mn	3024.87	P	33.72	1.11
56	Fe	24238.44	P	464.80	1.92
59	Co	292.24	P	33.72	11.54
60	Ni	72.45	P	2.14	2.96
63	Cu	1620.10	P	22.93	1.42
66	Zn	7947.98	P	66.22	0.83
72	Ge	604195.38	P	3922.00	0.65
72	Ge	269424.41	P	3383.00	1.26
72	Ge	805314.19	P	6597.00	0.82
75	As	148.22	P	16.74	11.29
78	Se	8.44	P	2.52	29.89
88	Sr	1081.19	P	99.25	9.18
90	Zr	325.57	P	6.94	2.13
95	Mo	101.12	P	18.36	18.16
107	Ag	34.45	P	11.71	34.00
111	Cd	10.63	P	15.07	141.77
115	In	5671786.00	A	20010.00	0.35
118	Sn	218.90	P	27.96	12.77
121	Sb	792.28	P	55.01	6.94
137	Ba	167.78	P	13.47	8.03
159	Tb	6373011.00	A	20760.00	0.33
182	W	104.45	P	10.72	10.26
205	Tl	206.68	P	32.83	15.89
208	Pb	988.94	P	20.10	2.03
209	Bi	3915490.00	A	64080.00	1.64
235	U	16.67	P	8.82	52.91
238	U	158.90	P	5.09	3.20

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09004
Date Acquired:	May 19 2016 02:36 pm
Operator:	MMendo
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H
Last Cal Update:	May 19 2016 02:34 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	843026.13	A	9066.00	1.08
7	Li	53375.80	P	502.30	0.94
9	Be	35.56	P	10.71	30.12
11	B	1070.07	P	47.26	4.42
23	Na	86738.25	P	294.30	0.34
24	Mg	11620.52	P	1399.00	12.04
27	Al	13656.78	P	1945.00	14.24
28	Si	3156.00	P	188.20	5.96
31	P	18828.77	P	831.50	4.42
39	K	115558.30	P	209.80	0.18
40	Ca	117507.30	P	3221.00	2.74
45	Sc	2166366.00	A	22950.00	1.06
45	Sc	501841.59	P	7424.00	1.48
45	Sc	3450346.00	A	47010.00	1.36
47	Ti	108.89	P	30.97	28.44
51	V	4821.27	P	96.69	2.01
52	Cr	1058.27	P	38.94	3.68
55	Mn	2549.23	P	195.10	7.65
56	Fe	11626.19	P	629.50	5.41
59	Co	265.57	P	41.68	15.70
60	Ni	44.67	P	2.40	5.38
63	Cu	1492.31	P	17.52	1.17
66	Zn	1669.05	P	10.72	0.64
72	Ge	592763.38	P	5481.00	0.92
72	Ge	268634.31	P	3046.00	1.13
72	Ge	803485.38	P	4267.00	0.53
75	As	134.00	P	5.29	3.95
78	Se	7.56	P	2.14	28.36
88	Sr	1216.76	P	94.53	7.77
90	Zr	256.68	P	31.80	12.39
95	Mo	71.11	P	7.70	10.83
107	Ag	30.00	P	5.77	19.25
111	Cd	14.03	P	12.62	89.98
115	In	5602625.00	A	33130.00	0.59
118	Sn	134.45	P	19.25	14.32
121	Sb	607.81	P	100.30	16.50
137	Ba	155.56	P	63.80	41.01
159	Tb	6271103.00	A	39060.00	0.62
182	W	100.00	P	28.48	28.48
205	Tl	163.34	P	23.33	14.28
208	Pb	876.71	P	76.89	8.77
209	Bi	3860489.00	A	49300.00	1.28
235	U	13.33	P	3.33	25.00
238	U	117.78	P	6.94	5.89

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09005.D\F6E09005.D#
Date Acquired:	May 19 2016 02:40 pm
Operator:	MMendo
Sample Name:	S1 0.5
Misc Info:	
Vial Number:	1104
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 19 2016 02:39 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	843485.50	A	3310.00	0.39
7 Li	58506.78	P	481.30	0.82
9 Be	1683.48	P	46.32	2.75
11 B	2963.72	P	126.70	4.28
23 Na	349569.31	P	2474.00	0.71
24 Mg	692935.13	P	2633.00	0.38
27 Al	974249.88	A	20260.00	2.08
28 Si	189223.80	P	879.90	0.47
31 P	46933.40	P	1058.00	2.25
39 K	190254.20	P	2486.00	1.31
40 Ca	754397.50	P	9428.00	1.25
45 Sc	2207431.00	A	38050.00	1.72
45 Sc	508286.91	P	4398.00	0.87
45 Sc	3525851.00	A	7928.00	0.22
47 Ti	1298.99	P	50.04	3.85
51 V	9742.38	P	46.28	0.48
52 Cr	6391.19	P	77.06	1.21
55 Mn	21792.46	P	331.90	1.52
56 Fe	995427.38	A	20130.00	2.02
59 Co	16312.89	P	110.10	0.67
60 Ni	1935.48	P	29.81	1.54
63 Cu	6526.15	P	66.68	1.02
66 Zn	7776.75	P	304.20	3.91
72 Ge	598715.13	P	10620.00	1.77
72 Ge	271727.31	P	765.10	0.28
72 Ge	814532.19	P	3525.00	0.43
75 As	935.59	P	40.77	4.36
78 Se	370.45	P	17.76	4.79
88 Sr	25068.20	P	293.00	1.17
90 Zr	13177.57	P	133.10	1.01
95 Mo	4351.93	P	26.96	0.62
107 Ag	6648.46	P	208.50	3.14
111 Cd	2406.30	P	132.90	5.52
115 In	5659837.00	A	37080.00	0.66
118 Sn	6951.97	P	281.10	4.04
121 Sb	9114.37	P	263.30	2.89
137 Ba	3372.76	P	82.63	2.45
159 Tb	6348504.00	A	139600.00	2.20
182 W	7062.11	P	166.70	2.36
205 Tl	16063.57	P	219.60	1.37
208 Pb	22230.25	P	381.50	1.72
209 Bi	3863549.00	A	22010.00	0.57
235 U	172.23	P	10.18	5.91
238 U	21497.33	P	247.20	1.15

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	843485.50	0.39	843026.13	100.1	60 - 125	
45 Sc	2207430.50	1.72	2166366.00	101.9	60 - 125	
45 Sc	508286.91	0.87	501841.66	101.3	60 - 125	
45 Sc	3525850.80	0.22	3450345.50	102.2	60 - 125	
72 Ge	598715.13	1.77	592763.38	101.0	60 - 125	
72 Ge	271727.31	0.28	268634.34	101.2	60 - 125	
72 Ge	814532.25	0.43	803485.44	101.4	60 - 125	
115 In	5659837.00	0.66	5602625.50	101.0	60 - 125	
159 Tb	6348503.50	2.20	6271103.00	101.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09006.D\F6E09006.D#
Date Acquired:	May 19 2016 02:44 pm
Operator:	MMendo
Sample Name:	S2 50
Misc Info:	
Vial Number:	1105
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 19 2016 02:43 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	777216.50	A	8549.00	1.10
7 Li	89173.83	P	640.60	0.72
9 Be	16466.02	P	124.40	0.76
11 B	24813.28	P	190.80	0.77
23 Na	25728530.00	A	475500.00	1.85
24 Mg	65836340.00	A	495100.00	0.75
27 Al	90672912.00	A	574200.00	0.63
28 Si	934760.50	A	18350.00	1.96
31 P	70130.66	P	553.20	0.79
39 K	7082959.00	A	75390.00	1.06
40 Ca	66411448.00	A	614100.00	0.92
45 Sc	2204274.00	A	22840.00	1.04
45 Sc	493406.00	P	5677.00	1.15
45 Sc	3419365.00	A	33110.00	0.97
47 Ti	108409.70	P	1065.00	0.98
51 V	444489.50	P	2332.00	0.52
52 Cr	497548.81	P	2242.00	0.45
55 Mn	11293700.00	A	121200.00	1.07
56 Fe	93126152.00	A	1725000.00	1.85
59 Co	1598966.00	A	11360.00	0.71
60 Ni	174997.50	P	538.50	0.31
63 Cu	441949.00	P	2705.00	0.61
66 Zn	234116.50	P	920.60	0.39
72 Ge	595461.13	P	5835.00	0.98
72 Ge	263716.41	P	1937.00	0.73
72 Ge	795402.88	P	8873.00	1.12
75 As	77272.49	P	342.30	0.44
78 Se	35531.26	P	279.20	0.79
88 Sr	2351825.00	A	29050.00	1.24
90 Zr	134223.41	P	225.30	0.17
95 Mo	427807.81	P	1810.00	0.42
107 Ag	111348.70	P	2079.00	1.87
111 Cd	234623.41	P	1027.00	0.44
115 In	5544062.00	A	41130.00	0.74
118 Sn	655061.63	P	1161.00	0.18
121 Sb	831279.38	P	1414.00	0.17
137 Ba	637543.88	P	2664.00	0.42
159 Tb	6357799.00	A	50880.00	0.80
182 W	70174.97	P	1010.00	1.44
205 Tl	1630434.00	A	22130.00	1.36
208 Pb	2187957.00	M	23810.00	1.09
209 Bi	3788952.00	A	44830.00	1.18
235 U	15628.78	P	127.70	0.82
238 U	2240018.00	A	11100.00	0.50

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	777216.56	1.10	843026.13	92.2	60 - 125	
45 Sc	2204274.50	1.04	2166366.00	101.7	60 - 125	
45 Sc	493406.03	1.15	501841.66	98.3	60 - 125	
45 Sc	3419364.80	0.97	3450345.50	99.1	60 - 125	
72 Ge	595461.13	0.98	592763.38	100.5	60 - 125	
72 Ge	263716.41	0.73	268634.34	98.2	60 - 125	
72 Ge	795402.94	1.12	803485.44	99.0	60 - 125	
115 In	5544062.00	0.74	5602625.50	99.0	60 - 125	
159 Tb	6357799.50	0.80	6271103.00	101.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09007.D\F6E09007.D#
Date Acquired:	May 19 2016 02:49 pm
Operator:	MMendo
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 19 2016 02:47 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	746618.31	A	6321.00	0.85
7 Li	234845.80	P	1977.00	0.84
9 Be	75559.56	P	1063.00	1.41
11 B	107381.70	P	1489.00	1.39
23 Na	118781200.00	A	1510000.00	1.27
24 Mg	299096290.00	A	3627000.00	1.21
27 Al	425614590.00	A	3799000.00	0.89
28 Si	4318000.00	A	15630.00	0.36
31 P	272884.81	P	1611.00	0.59
39 K	33468720.00	A	526300.00	1.57
40 Ca	312048190.00	A	6628000.00	2.12
45 Sc	2112500.00	A	53380.00	2.53
45 Sc	479427.00	P	281.80	0.06
45 Sc	3383795.00	A	55270.00	1.63
47 Ti	525123.50	P	6879.00	1.31
51 V	2081651.00	A	23330.00	1.12
52 Cr	2317684.00	A	17230.00	0.74
55 Mn	52058420.00	A	691200.00	1.33
56 Fe	427677890.00	A	6978000.00	1.63
59 Co	7113626.00	A	33610.00	0.47
60 Ni	800083.69	P	2610.00	0.33
63 Cu	1997468.00	A	13850.00	0.69
66 Zn	1048972.00	A	3161.00	0.30
72 Ge	554303.50	P	3315.00	0.60
72 Ge	252386.09	P	1819.00	0.72
72 Ge	758786.63	P	2009.00	0.26
75 As	365171.19	P	1752.00	0.48
78 Se	161195.41	P	1873.00	1.16
88 Sr	10758230.00	A	32320.00	0.30
90 Zr	591830.19	P	12940.00	2.19
95 Mo	2070089.00	A	44570.00	2.15
107 Ag	495487.50	P	2315.00	0.47
111 Cd	1086153.00	A	15850.00	1.46
115 In	5078715.00	A	94940.00	1.87
118 Sn	3106177.00	A	26340.00	0.85
121 Sb	3970950.00	A	43190.00	1.09
137 Ba	3069771.00	A	27570.00	0.90
159 Tb	6093142.00	A	42290.00	0.69
182 W	327922.41	P	739.00	0.23
205 Tl	7337057.00	A	50420.00	0.69
208 Pb	10015110.00	A	111300.00	1.11
209 Bi	3415813.00	A	45130.00	1.32
235 U	72572.51	P	887.40	1.22
238 U	10228730.00	A	84770.00	0.83

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	746618.25	0.85	843026.13	88.6	60 - 125	
45 Sc	2112499.80	2.53	2166366.00	97.5	60 - 125	
45 Sc	479427.03	0.06	501841.66	95.5	60 - 125	
45 Sc	3383794.80	1.63	3450345.50	98.1	60 - 125	
72 Ge	554303.50	0.60	592763.38	93.5	60 - 125	
72 Ge	252386.14	0.72	268634.34	94.0	60 - 125	
72 Ge	758786.56	0.26	803485.44	94.4	60 - 125	
115 In	5078714.50	1.87	5602625.50	90.6	60 - 125	
159 Tb	6093142.00	0.69	6271103.00	97.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09008.D\F6E09008.D#
Date Acquired:	May 19 2016 02:53 pm
Operator:	MMendo
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update:	May 19 2016 02:51 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	736925.38	A	9563.00	1.30
7 Li	421837.09	P	3068.00	0.73
9 Be	152121.09	P	570.90	0.38
11 B	217399.41	P	2989.00	1.37
23 Na	241036000.00	A	3516000.00	1.46
24 Mg	624498620.00	A	6878000.00	1.10
27 Al	877421380.00	A	8549000.00	0.97
28 Si	8504297.00	A	23560.00	0.28
31 P	530921.63	P	3525.00	0.66
39 K	68030488.00	A	305700.00	0.45
40 Ca	609233790.00	A	8710000.00	1.43
45 Sc	2136458.00	A	17220.00	0.81
45 Sc	480182.09	P	3362.00	0.70
45 Sc	3388380.00	A	13410.00	0.40
47 Ti	1110734.00	A	16090.00	1.45
51 V	4145856.00	A	41150.00	0.99
52 Cr	4605929.00	A	65130.00	1.41
55 Mn	104730700.00	A	1127000.00	1.08
56 Fe	857609090.00	A	19160000.00	2.23
59 Co	14215380.00	A	215600.00	1.52
60 Ni	1572934.00	A	5625.00	0.36
63 Cu	3883390.00	A	15040.00	0.39
66 Zn	2085615.00	A	28050.00	1.34
72 Ge	526039.19	P	16640.00	3.16
72 Ge	252610.20	P	2065.00	0.82
72 Ge	771926.88	P	5654.00	0.73
75 As	719516.00	P	6623.00	0.92
78 Se	312724.09	P	1732.00	0.55
88 Sr	21448990.00	A	184700.00	0.86
90 Zr	1292278.00	A	18790.00	1.45
95 Mo	4080775.00	A	20290.00	0.50
107 Ag	951298.00	P	3294.00	0.35
111 Cd	2117476.00	A	16980.00	0.80
115 In	4927151.00	A	30460.00	0.62
118 Sn	5988618.00	A	33740.00	0.56
121 Sb	7629511.00	A	44570.00	0.58
137 Ba	5870772.00	A	45650.00	0.78
159 Tb	5817248.00	A	22040.00	0.38
182 W	632311.13	P	8297.00	1.31
205 Tl	14127770.00	A	145100.00	1.03
208 Pb	19624140.00	A	115100.00	0.59
209 Bi	3290945.00	A	20830.00	0.63
235 U	142739.30	P	687.80	0.48
238 U	20296530.00	A	186700.00	0.92

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	736925.38	1.30	843026.13	87.4	60 - 125	
45 Sc	2136458.00	0.81	2166366.00	98.6	60 - 125	
45 Sc	480182.06	0.70	501841.66	95.7	60 - 125	
45 Sc	3388380.50	0.40	3450345.50	98.2	60 - 125	
72 Ge	526039.19	3.16	592763.38	88.7	60 - 125	
72 Ge	252610.20	0.82	268634.34	94.0	60 - 125	
72 Ge	771926.88	0.73	803485.44	96.1	60 - 125	
115 In	4927151.50	0.62	5602625.50	87.9	60 - 125	
159 Tb	5817248.00	0.38	6271103.00	92.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09009.D\F6E09009.D#
Date Acquired:	May 19 2016 02:57 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	31.28	ppb	267003.3	0.57	30.00	90 - 110	
9 Be	32.78	ppb	94627.1	0.60	30.00	90 - 110	
11 B	31.28	ppb	67731.9	0.35	30.00	90 - 110	
23 Na	29290.00	ppb	141375500.0	1.34	30000.00	90 - 110	
24 Mg	28510.00	ppb	359380900.0	2.12	30000.00	90 - 110	
27 Al	29660.00	ppb	509928610.0	1.30	30000.00	90 - 110	
28 Si	3157.00	ppb	5291639.0	0.88	3000.00	90 - 110	
31 P	295.40	ppb	311053.3	0.35	300.00	90 - 110	
39 K	30100.00	ppb	40033088.0	0.61	30000.00	90 - 110	
40 Ca	31020.00	ppb	380108700.0	0.91	30000.00	90 - 110	
47 Ti	298.40	ppb	615583.2	0.79	300.00	90 - 110	
51 V	305.30	ppb	2498239.0	0.50	300.00	90 - 110	
52 Cr	303.10	ppb	2804093.0	1.36	300.00	90 - 110	
55 Mn	1991.00	ppb	68185632.0	0.37	2000.00	90 - 110	
56 Fe	29460.00	ppb	513011200.0	0.78	30000.00	90 - 110	
59 Co	280.80	ppb	8321153.0	0.51	300.00	90 - 110	
60 Ni	296.50	ppb	941835.4	1.33	300.00	90 - 110	
63 Cu	290.40	ppb	2339052.0	0.92	300.00	90 - 110	
66 Zn	298.50	ppb	1261984.0	1.37	300.00	90 - 110	
75 As	301.10	ppb	433231.1	1.35	300.00	90 - 110	
78 Se	297.70	ppb	192263.9	1.15	300.00	90 - 110	
88 Sr	302.10	ppb	13063070.0	1.02	300.00	90 - 110	
90 Zr	32.50	ppb	795231.5	1.18	30.00	90 - 110	
95 Mo	309.20	ppb	2411635.0	0.91	300.00	90 - 110	
107 Ag	33.45	ppb	629112.9	0.61	30.00	90 - 110	Fail
111 Cd	304.40	ppb	1332572.0	1.28	300.00	90 - 110	
118 Sn	306.40	ppb	3768012.0	0.86	300.00	90 - 110	
121 Sb	305.70	ppb	4714924.0	1.47	300.00	90 - 110	
137 Ba	316.90	ppb	1891526.0	2.06	300.00	90 - 110	
182 W	27.19	ppb	362703.0	1.36	30.00	90 - 110	
205 Tl	292.70	ppb	8911150.0	2.70	300.00	90 - 110	
208 Pb	294.60	ppb	12119550.0	2.27	300.00	90 - 110	
235 U	1.85	ppb	86728.0	0.88	2.20	90 - 110	Fail
238 U	295.30	ppb	12388190.0	1.64	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	700351.3	0.75	843026.13	83.1	60 - 125	
45 Sc	2078628.8	1.62	2166366.00	96.0	60 - 125	
45 Sc	469886.1	0.61	501841.66	93.6	60 - 125	
45 Sc	3293012.8	0.42	3450345.50	95.4	60 - 125	
72 Ge	549887.3	1.82	592763.38	92.8	60 - 125	
72 Ge	251812.0	1.63	268634.34	93.7	60 - 125	
72 Ge	756364.8	0.59	803485.44	94.1	60 - 125	
115 In	5100464.5	0.64	5602625.50	91.0	60 - 125	
159 Tb	6100453.5	1.66	6271103.00	97.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09010.D\F6E09010.D#
Date Acquired:	May 19 2016 03:00 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0215	ppb	46108.8	425.96	0.20	
9 Be	0.0026	ppb	35.6	96.33	0.10	
11 B	0.3141	ppb	1691.3	7.83	5.00	
23 Na	2.4670	ppb	95749.4	24.29	40.00	
24 Mg	0.2027	ppb	14632.1	55.80	10.00	
27 Al	0.1980	ppb	16682.2	60.10	20.00	
28 Si	0.6498	ppb	4170.7	10.86	20.00	
31 P	-2.6790	ppb	15303.1	11.04	10.00	
39 K	-3.0510	ppb	105417.1	63.85	20.00	
40 Ca	-1.6850	ppb	92115.4	11.42	25.00	
47 Ti	-0.0031	ppb	120.0	304.83	0.50	
51 V	-0.0564	ppb	4446.7	19.50	0.50	
52 Cr	-0.0230	ppb	1036.7	18.43	0.20	
55 Mn	0.0285	ppb	3667.3	32.88	0.20	
56 Fe	3.1630	ppb	66662.0	7.51	10.00	
59 Co	0.0061	ppb	450.0	18.77	0.20	
60 Ni	0.0102	ppb	77.3	36.85	0.20	
63 Cu	0.0208	ppb	1660.8	48.63	0.40	
66 Zn	-0.0328	ppb	1485.7	79.98	2.00	
75 As	0.0322	ppb	180.4	12.43	0.20	
78 Se	0.0764	ppb	60.2	14.03	0.20	
90 Zr	0.0102	ppb	476.7	3.35	2.00	
95 Mo	0.1066	ppb	982.3	12.09	0.40	
107 Ag	0.0010	ppb	47.8	80.37	0.20	
111 Cd	0.0067	ppb	46.2	47.26	0.20	
118 Sn	0.0767	ppb	1184.5	17.21	0.20	
121 Sb	0.0365	ppb	1231.2	9.03	0.40	
137 Ba	0.0074	ppb	171.1	60.27	0.20	
182 W	0.0251	ppb	465.6	27.49	1.00	
205 Tl	0.0246	ppb	942.3	5.23	0.20	
208 Pb	0.0060	ppb	1140.1	20.44	0.10	
235 U	0.0000	ppb	11.1	33579.00	1.00	
238 U	0.0202	ppb	996.7	13.93	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	724140.4	1.78	843026.13	85.9	60 - 125	
45 Sc	2089778.8	2.14	2166366.00	96.5	60 - 125	
45 Sc	473655.0	1.25	501841.66	94.4	60 - 125	
45 Sc	3293964.3	1.08	3450345.50	95.5	60 - 125	
72 Ge	584830.3	1.95	592763.38	98.7	60 - 125	
72 Ge	263595.2	1.05	268634.34	98.1	60 - 125	
72 Ge	784403.3	0.88	803485.44	97.6	60 - 125	
115 In	5659178.0	2.17	5602625.50	101.0	60 - 125	
159 Tb	6321505.0	0.42	6271103.00	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09011.D\F6E09011.D#
Date Acquired: May 19 2016 03:05 pm
Acq. Method: EMX6020H.M
Operator: MMendoq
Sample Name: MRLE1801 mm 5/24/16
Misc Info: 0.5/50/4 ppb
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	54412.7	0.0000	1.0520	ppb	11.76	50.00	
9 Be	# 3	6	3082.6	0.0000	1.0160	ppb	3.57	50.00	
11 B	# 3	6	25512.4	0.0000	11.0200	ppb	1.32	100.00	
23 Na	# 1	45	577505.5	0.0000	99.6300	ppb	0.51	50000.00	
24 Mg	# 3	45	1310997.0	0.0000	101.0000	ppb	1.21	50000.00	
27 Al	# 3	45	1802936.0	0.0000	102.1000	ppb	1.97	50000.00	
28 Si	# 1	45	4481.9	0.0000	0.7856	ppb	9.83	5000.00	
31 P	# 3	45	16655.1	0.0000	-1.6400	ppb	40.64	500.00	
39 K	# 2	45	246209.2	0.0000	99.7200	ppb	1.42	50000.00	
40 Ca	# 1	45	1407306.0	0.0000	103.0000	ppb	1.62	50000.00	
47 Ti	# 3	45	2266.9	0.0000	1.0160	ppb	2.65	500.00	
51 V	# 2	45	13581.4	0.0000	1.0310	ppb	1.37	500.00	
52 Cr	# 2	45	11137.1	0.0000	1.0440	ppb	1.05	500.00	
55 Mn	# 3	45	42027.9	0.0000	1.1250	ppb	2.45	3000.00	
56 Fe	# 1	45	1928409.0	0.0000	107.5000	ppb	0.16	50000.00	
59 Co	# 3	45	32154.1	0.0000	1.0550	ppb	2.06	500.00	
60 Ni	# 2	45	3716.7	0.0000	1.1310	ppb	0.92	500.00	
63 Cu	# 2	45	11238.8	0.0000	1.1820	ppb	0.98	500.00	
66 Zn	# 3	72	50531.3	0.0000	11.1000	ppb	3.12	500.00	
75 As	# 2	72	1736.1	0.0000	1.0550	ppb	3.30	500.00	
78 Se	# 1	72	737.6	0.0000	1.0520	ppb	2.67	500.00	
88 Sr	# 3	72	98097.8	0.0000	2.1450	ppb	1.80	500.00	
90 Zr	# 3	72	650.0	0.0000	0.0168	ppb	2.60	50.00	
95 Mo	# 3	115	9057.6	0.0000	1.0110	ppb	2.61	500.00	
107 Ag	# 3	115	12196.8	0.0000	0.5673	ppb	3.35	50.00	
111 Cd	# 3	115	4953.8	0.0000	0.9899	ppb	6.12	500.00	
118 Sn	# 3	115	14456.8	0.0000	1.0210	ppb	0.48	500.00	
121 Sb	# 3	115	18126.8	0.0000	0.9951	ppb	0.68	500.00	
137 Ba	# 3	115	6817.5	0.0000	0.9831	ppb	2.39	1000.00	
182 W	# 3	159	273.3	0.0000	0.0105	ppb	11.45	50.00	
205 Tl	# 3	159	33475.1	0.0000	1.0190	ppb	2.22	500.00	
208 Pb	# 3	159	44986.8	0.0000	0.9982	ppb	4.48	500.00	
235 U	# 3	159	302.2	0.0000	0.0058	ppb	6.19	30.00	
238 U	# 3	159	42997.1	0.0000	0.9519	ppb	1.32	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	729616.06	0.92	843026.13	86.5	60 - 125	
45 Sc # 1	2127986.80	1.71	2166366.00	98.2	60 - 125	
45 Sc # 2	480203.13	0.38	501841.66	95.7	60 - 125	
45 Sc # 3	3358535.30	2.33	3450345.50	97.3	60 - 125	
72 Ge # 1	590986.75	1.05	592763.38	99.7	60 - 125	
72 Ge # 2	265867.56	1.02	268634.34	99.0	60 - 125	
72 Ge # 3	789454.56	1.55	803485.44	98.3	60 - 125	
115 In # 3	5817803.50	1.47	5602625.50	103.8	60 - 125	
159 Tb # 3	6549286.00	2.17	6271103.00	104.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09012.D\F6E09012.D#
Date Acquired: May 19 2016 03:09 pm
Acq. Method: EMX6020H.M
Operator: MMendoza
Sample Name: MRLE1802 MJM 5/19/16
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	50831.4	0.0000	0.5945	ppb	6.86	50.00	
9 Be	# 3	6	1612.4	0.0000	0.5289	ppb	3.03	50.00	
11 B	# 3	6	4291.9	0.0000	1.4840	ppb	4.29	100.00	
23 Na	# 1	45	285853.7	0.0000	52.4000	ppb	4.89	50000.00	
24 Mg	# 3	45	635718.1	0.0000	48.2900	ppb	0.98	50000.00	
27 Al	# 3	45	904795.6	0.0000	50.6200	ppb	1.30	50000.00	
28 Si	# 1	45	4589.8	0.0000	1.3900	ppb	12.07	5000.00	
31 P	# 3	45	15826.3	0.0000	-2.5250	ppb	14.01	500.00	
39 K	# 2	45	170434.1	0.0000	44.7300	ppb	5.58	50000.00	
40 Ca	# 1	45	645637.0	0.0000	52.7000	ppb	1.29	50000.00	
47 Ti	# 3	45	1203.4	0.0000	0.5086	ppb	2.29	500.00	
51 V	# 2	45	9234.5	0.0000	0.5179	ppb	8.67	500.00	
52 Cr	# 2	45	6062.8	0.0000	0.5120	ppb	0.82	500.00	
55 Mn	# 3	45	21519.7	0.0000	0.5351	ppb	1.03	3000.00	
56 Fe	# 1	45	847828.8	0.0000	56.6500	ppb	5.36	50000.00	
59 Co	# 3	45	16321.8	0.0000	0.5288	ppb	1.55	500.00	
60 Ni	# 2	45	97555.6	0.0000	30.2500	ppb	1.01	500.00	
63 Cu	# 2	45	8119.4	0.0000	0.8103	ppb	3.16	500.00	
66 Zn	# 3	72	21171.6	0.0000	4.3390	ppb	1.14	500.00	
75 As	# 2	72	920.0	0.0000	0.5268	ppb	3.55	500.00	
78 Se	# 1	72	304.9	0.0000	0.4944	ppb	0.96	500.00	
88 Sr	# 3	72	24771.0	0.0000	0.5093	ppb	1.07	500.00	
90 Zr	# 3	72	351.1	0.0000	0.0048	ppb	31.96	50.00	
95 Mo	# 3	115	4584.2	0.0000	0.5201	ppb	3.53	500.00	
107 Ag	# 3	115	6425.0	0.0000	0.3050	ppb	3.34	50.00	
111 Cd	# 3	115	2473.7	0.0000	0.5037	ppb	4.15	500.00	
118 Sn	# 3	115	7292.1	0.0000	0.5216	ppb	2.14	500.00	
121 Sb	# 3	115	9490.2	0.0000	0.5161	ppb	0.38	500.00	
137 Ba	# 3	115	3543.9	0.0000	0.5138	ppb	1.56	1000.00	
182 W	# 3	159	212.2	0.0000	0.0064	ppb	31.76	50.00	
205 Tl	# 3	159	16834.5	0.0000	0.5147	ppb	3.17	500.00	
208 Pb	# 3	159	23306.6	0.0000	0.5119	ppb	0.56	500.00	
235 U	# 3	159	174.5	0.0000	0.0033	ppb	16.94	30.00	
238 U	# 3	159	21754.4	0.0000	0.4848	ppb	0.47	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	726877.75	1.69	843026.13	86.2	60 - 125	
45 Sc # 1	1770083.10	6.35	2166366.00	81.7	60 - 125	
45 Sc # 2	476789.25	0.90	501841.66	95.0	60 - 125	
45 Sc # 3	3372028.00	0.95	3450345.50	97.7	60 - 125	
72 Ge # 1	513321.41	4.71	592763.38	86.6	60 - 125	
72 Ge # 2	262136.03	1.08	268634.34	97.6	60 - 125	
72 Ge # 3	804927.56	1.11	803485.44	100.2	60 - 125	
115 In # 3	5690736.50	1.44	5602625.50	101.6	60 - 125	
159 Tb # 3	6487525.50	1.09	6271103.00	103.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09013.D\F6E09013.D#
Date Acquired:	May 19 2016 03:13 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	1.14	ppb	38702.2	11.90	---	
9 Be	0.01	ppb	36.7	31.71	---	
11 B	0.74	ppb	1859.1	4.67	---	
23 Na	95920.00	ppb	402430210.0	0.78	120000.00	
24 Mg	91350.00	ppb	983340990.0	0.42	120000.00	
27 Al	95770.00	ppb	1406122000.0	1.01	120000.00	
28 Si	6.31	ppb	11847.3	1.57	---	
31 P	103400.00	ppb	87619568.0	0.84	---	
39 K	101000.00	ppb	115233900.0	0.86	120000.00	
40 Ca	101100.00	ppb	1076820000.0	0.54	120000.00	
47 Ti	2212.00	ppb	3896357.0	0.77	2400.00	
51 V	0.09	ppb	4807.9	14.72	---	
52 Cr	1.33	ppb	11644.6	1.17	---	
55 Mn	0.33	ppb	11811.8	1.32	---	
56 Fe	96630.00	ppb	1463166000.0	0.48	120000.00	
59 Co	0.28	ppb	7333.2	2.76	---	
60 Ni	0.30	ppb	851.1	1.44	---	
63 Cu	0.92	ppb	7652.7	1.58	---	
66 Zn	2.54	ppb	11122.4	4.06	---	
75 As	0.23	ppb	405.6	7.33	---	
78 Se	0.06	ppb	41.8	8.03	---	
88 Sr	0.63	ppb	25616.9	1.76	---	
90 Zr	0.13	ppb	3007.1	6.61	---	
95 Mo	2128.00	ppb	14263680.0	1.63	2400.00	
107 Ag	0.03	ppb	443.4	7.99	---	
111 Cd	0.33	ppb	1265.7	13.38	---	
118 Sn	0.04	ppb	570.0	15.71	---	
121 Sb	0.06	ppb	1203.4	4.88	---	
137 Ba	0.11	ppb	654.5	15.12	---	
182 W	0.14	ppb	1702.4	1.28	---	
205 Tl	0.00	ppb	253.3	25.67	---	
208 Pb	0.20	ppb	8073.5	1.66	---	
235 U	0.00	ppb	13.3	148.05	---	
238 U	0.00	ppb	233.3	15.85	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	512768.1	0.96	843026.13	60.8	60 - 125	
45 Sc	1807277.6	1.67	2166366.00	83.4	60 - 125	
45 Sc	403719.1	0.61	501841.66	80.4	60 - 125	
45 Sc	2812166.3	0.91	3450345.50	81.5	60 - 125	
72 Ge	470386.7	1.48	592763.38	79.4	60 - 125	
72 Ge	221326.8	0.71	268634.34	82.4	60 - 125	
72 Ge	684379.3	0.35	803485.44	85.2	60 - 125	
115 In	4382612.0	1.12	5602625.50	78.2	60 - 125	
159 Tb	5407491.0	1.30	6271103.00	86.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09014.D\F6E09014.D#
Date Acquired:	May 19 2016 03:18 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	22.66	ppb	145144.0	0.81	20.00	80 - 120	
9 Be	23.31	ppb	47476.7	0.71	20.00	80 - 120	
11 B	21.15	ppb	32539.0	1.04	20.00	80 - 120	
23 Na	93350.00	ppb	386409090.0	1.97	100000.00	80 - 120	
24 Mg	88260.00	ppb	957621310.0	1.64	100000.00	80 - 120	
27 Al	93590.00	ppb	1385215000.0	0.90	100000.00	80 - 120	
28 Si	201.30	ppb	291923.7	1.83	200.00	80 - 120	
31 P	99730.00	ppb	85190464.0	1.54	100000.00	80 - 120	
39 K	99440.00	ppb	113265800.0	1.05	100000.00	80 - 120	
40 Ca	98200.00	ppb	1032350000.0	1.46	100000.00	80 - 120	
47 Ti	2243.00	ppb	3981321.0	0.76	2000.00	80 - 120	
51 V	21.19	ppb	152675.6	0.33	20.00	80 - 120	
52 Cr	21.33	ppb	170271.6	0.72	20.00	80 - 120	
55 Mn	20.20	ppb	597709.4	0.80	20.00	80 - 120	
56 Fe	98100.00	ppb	1465777000.0	1.01	100000.00	80 - 120	
59 Co	19.08	ppb	486943.7	1.17	20.00	80 - 120	
60 Ni	20.34	ppb	55471.1	0.69	20.00	80 - 120	
63 Cu	20.16	ppb	140471.9	1.27	20.00	80 - 120	
66 Zn	20.68	ppb	81136.6	0.19	20.00	80 - 120	
75 As	21.61	ppb	27582.1	1.24	20.00	80 - 120	
78 Se	22.17	ppb	12357.1	0.36	20.00	80 - 120	
88 Sr	19.73	ppb	779834.7	0.88	20.00	80 - 120	
90 Zr	10.03	ppb	224242.4	1.15	20.00	80 - 120	Fail
95 Mo	2156.00	ppb	14523000.0	1.32	2000.00	80 - 120	
107 Ag	20.40	ppb	331445.4	1.45	20.00	80 - 120	
111 Cd	19.42	ppb	73435.1	0.70	20.00	80 - 120	
118 Sn	19.85	ppb	210974.3	2.12	20.00	80 - 120	
121 Sb	20.71	ppb	276362.1	2.04	20.00	80 - 120	
137 Ba	20.61	ppb	106345.7	2.42	20.00	80 - 120	
182 W	19.68	ppb	237019.4	1.40	20.00	80 - 120	
205 Tl	18.98	ppb	521818.8	1.38	20.00	80 - 120	
208 Pb	18.76	ppb	697715.7	1.64	20.00	80 - 120	
235 U	0.12	ppb	5175.6	1.76	0.14	80 - 120	
238 U	19.22	ppb	728364.9	1.49	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	494072.0	0.58	843026.13	58.6	60 - 125	ISFail
45 Sc	1783723.8	2.98	2166366.00	82.3	60 - 125	
45 Sc	403168.5	1.10	501841.66	80.3	60 - 125	
45 Sc	2834860.8	1.05	3450345.50	82.2	60 - 125	
72 Ge	474409.7	1.22	592763.38	80.0	60 - 125	
72 Ge	222451.1	0.15	268634.34	82.8	60 - 125	
72 Ge	690368.3	0.88	803485.44	85.9	60 - 125	
115 In	4405698.0	1.35	5602625.50	78.6	60 - 125	
159 Tb	5507716.5	1.06	6271103.00	87.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09015.D\F6E09015.D#
Date Acquired:	May 19 2016 03:23 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	MRLE1803
Misc Info:	500 ppb CAT
Vial Number:	1207
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	38352.6	0.0000	0.3955	ppb	76.41	50.00	
9 Be	# 3	6	23.3	0.0000	0.0008	ppb	380.23	50.00	
11 B	# 3	6	3719.5	0.0000	1.7080	ppb	6.15	100.00	
23 Na	# 1	45	2356954.0	0.0000	480.5000	ppb	2.27	50000.00	
24 Mg	# 3	45	5675329.0	0.0000	464.0000	ppb	3.15	50000.00	
27 Al	# 3	45	8122002.0	0.0000	487.1000	ppb	3.37	50000.00	
28 Si	# 1	45	3982.9	0.0000	0.5957	ppb	18.48	5000.00	
31 P	# 3	45	17536.3	0.0000	0.1549	ppb	474.31	500.00	
39 K	# 2	45	756464.1	0.0000	510.4000	ppb	2.00	50000.00	
40 Ca	# 1	45	6408952.0	0.0000	523.9000	ppb	1.51	50000.00	
47 Ti	# 3	45	324.5	0.0000	0.1016	ppb	39.99	500.00	
51 V	# 2	45	5024.7	0.0000	0.0425	ppb	26.44	500.00	
52 Cr	# 2	45	1093.8	0.0000	-0.0113	ppb	51.11	500.00	
55 Mn	# 3	45	2970.4	0.0000	0.0110	ppb	16.46	3000.00	
56 Fe	# 1	45	9339405.0	0.0000	545.8000	ppb	0.76	50000.00	
59 Co	# 3	45	412.2	0.0000	0.0053	ppb	33.86	500.00	
60 Ni	# 2	45	311.6	0.0000	0.0879	ppb	8.08	500.00	
63 Cu	# 2	45	1944.1	0.0000	0.0669	ppb	13.02	500.00	
66 Zn	# 3	72	11117.9	0.0000	2.1280	ppb	3.47	500.00	
75 As	# 2	72	138.0	0.0000	0.0038	ppb	205.00	500.00	
78 Se	# 1	72	18.4	0.0000	0.0156	ppb	9.40	500.00	
88 Sr	# 3	72	1645.7	0.0000	0.0071	ppb	21.14	500.00	
90 Zr	# 3	72	445.6	0.0000	0.0086	ppb	11.53	50.00	
95 Mo	# 3	115	3920.7	0.0000	0.4247	ppb	13.71	500.00	
107 Ag	# 3	115	41.1	0.0000	0.0006	ppb	70.38	50.00	
111 Cd	# 3	115	13.2	0.0000	-0.0002	ppb	4382.20	500.00	
118 Sn	# 3	115	326.7	0.0000	0.0128	ppb	17.57	500.00	
121 Sb	# 3	115	785.6	0.0000	0.0082	ppb	12.79	500.00	
137 Ba	# 3	115	506.7	0.0000	0.0545	ppb	14.00	1000.00	
182 W	# 3	159	235.6	0.0000	0.0069	ppb	29.11	50.00	
205 Tl	# 3	159	215.6	0.0000	0.0010	ppb	56.27	500.00	
208 Pb	# 3	159	736.7	0.0000	-0.0050	ppb	18.95	500.00	
235 U	# 3	159	8.9	0.0000	-0.0001	ppb	157.60	30.00	
238 U	# 3	159	166.7	0.0000	0.0008	ppb	95.36	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	565105.13	2.27	843026.13	67.0	60 - 125	
45 Sc # 1	2039941.60	0.43	2166366.00	94.2	60 - 125	
45 Sc # 2	452414.47	0.54	501841.66	90.2	60 - 125	
45 Sc # 3	3189757.30	1.86	3450345.50	92.4	60 - 125	
72 Ge # 1	587484.44	0.09	592763.38	99.1	60 - 125	
72 Ge # 2	264358.09	0.60	268634.34	98.4	60 - 125	
72 Ge # 3	796654.75	1.67	803485.44	99.1	60 - 125	
115 In # 3	5953419.50	2.29	5602625.50	106.3	60 - 125	
159 Tb # 3	6952306.00	2.16	6271103.00	110.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09016.D\F6E09016.D#
Date Acquired: May 19 2016 03:27 pm
Operator: MMendo
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 19 2016 02:55 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.93 ppb	7.23	25.00	90 - 110	
9 Be	28.42 ppb	9.66	25.00	90 - 110	Fail
11 B	53.65 ppb	10.04	50.00	90 - 110	
23 Na	22890.00 ppb	1.51	25000.00	90 - 110	
24 Mg	23090.00 ppb	3.07	25000.00	90 - 110	
27 Al	23900.00 ppb	0.63	25000.00	90 - 110	
28 Si	2454.00 ppb	1.29	2500.00	90 - 110	
31 P	247.80 ppb	0.25	250.00	90 - 110	
39 K	24880.00 ppb	0.82	25000.00	90 - 110	
40 Ca	24610.00 ppb	1.14	25000.00	90 - 110	
47 Ti	251.10 ppb	2.47	250.00	90 - 110	
51 V	260.90 ppb	0.74	250.00	90 - 110	
52 Cr	258.70 ppb	1.54	250.00	90 - 110	
55 Mn	1534.00 ppb	4.06	1500.00	90 - 110	
56 Fe	25110.00 ppb	0.59	25000.00	90 - 110	
59 Co	247.20 ppb	4.57	250.00	90 - 110	
60 Ni	261.10 ppb	0.99	250.00	90 - 110	
63 Cu	262.70 ppb	0.93	250.00	90 - 110	
66 Zn	251.70 ppb	1.96	250.00	90 - 110	
75 As	256.70 ppb	0.22	250.00	90 - 110	
78 Se	253.20 ppb	0.98	250.00	90 - 110	
88 Sr	258.50 ppb	2.72	250.00	90 - 110	
90 Zr	27.85 ppb	1.15	25.00	90 - 110	Fail
95 Mo	261.40 ppb	1.43	250.00	90 - 110	
107 Ag	26.12 ppb	2.38	25.00	90 - 110	
111 Cd	255.90 ppb	1.31	250.00	90 - 110	
118 Sn	259.30 ppb	0.84	250.00	90 - 110	
121 Sb	255.20 ppb	2.22	250.00	90 - 110	
137 Ba	516.80 ppb	1.38	500.00	90 - 110	
182 W	24.95 ppb	0.81	25.00	90 - 110	
205 Tl	246.60 ppb	2.20	250.00	90 - 110	
208 Pb	256.60 ppb	2.11	250.00	90 - 110	
235 U	1.61 ppb	2.70	1.80	90 - 110	Fail
238 U	255.20 ppb	0.58	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	551570.38	7.83	843026.13	65.4	60 - 125	
45 Sc	1896925.00	1.08	2166366.00	87.6	60 - 125	
45 Sc	428133.88	0.86	501841.66	85.3	60 - 125	
45 Sc	3051659.80	2.61	3450345.50	88.4	60 - 125	
72 Ge	516867.34	0.63	592763.38	87.2	60 - 125	
72 Ge	238008.56	0.14	268634.34	88.6	60 - 125	
72 Ge	729653.06	0.99	803485.44	90.8	60 - 125	
115 In	5081831.00	1.13	5602625.50	90.7	60 - 125	
159 Tb	5862604.00	1.15	6271103.00	93.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09017.D\F6E09017.D#
Date Acquired:	May 19 2016 03:31 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.6509	ppb	38092.1	14.79	0.20	Fail
9 Be	0.0032	ppb	27.8	177.39	0.10	
11 B	0.2854	ppb	1214.5	21.78	5.00	
23 Na	4.2330	ppb	93839.8	6.78	40.00	
24 Mg	0.4929	ppb	16806.6	16.75	10.00	
27 Al	-0.0838	ppb	10881.0	69.44	20.00	
28 Si	-0.0261	ppb	2727.0	277.72	20.00	
31 P	-1.8800	ppb	14782.6	49.60	10.00	
39 K	0.1144	ppb	98945.6	184.44	20.00	
40 Ca	-2.2510	ppb	76604.0	5.71	25.00	
47 Ti	-0.0091	ppb	98.9	129.64	0.50	
51 V	-0.0057	ppb	4388.5	219.45	0.50	
52 Cr	-0.0226	ppb	938.9	20.86	0.20	
55 Mn	0.0011	ppb	2505.9	287.69	0.20	
56 Fe	2.7310	ppb	53174.8	5.98	10.00	
59 Co	0.0030	ppb	328.9	96.65	0.20	
60 Ni	0.0057	ppb	56.9	45.34	0.20	
63 Cu	0.0126	ppb	1439.0	7.35	0.40	
66 Zn	0.0013	ppb	1536.8	783.87	2.00	
75 As	0.0141	ppb	142.7	51.97	0.20	
78 Se	0.0530	ppb	41.3	19.37	0.20	
88 Sr	-0.0050	ppb	1010.1	29.54	0.20	
90 Zr	0.0030	ppb	276.7	34.78	2.00	
95 Mo	0.1240	ppb	1104.5	9.00	0.40	
107 Ag	0.0006	ppb	38.9	25.28	0.20	
111 Cd	0.0044	ppb	33.9	93.96	0.20	
118 Sn	0.0396	ppb	658.9	5.32	0.20	
121 Sb	0.1876	ppb	3724.0	5.81	0.40	
137 Ba	0.0066	ppb	161.1	18.32	0.20	
182 W	0.0129	ppb	293.4	13.19	1.00	
205 Tl	0.0051	ppb	321.1	18.30	0.20	
208 Pb	0.0006	ppb	894.5	48.98	0.10	
235 U	0.0000	ppb	8.9	366.16	1.00	
238 U	0.0122	ppb	643.4	28.66	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	540317.8	1.08	843026.13	64.1	60 - 125	
45 Sc	1879430.6	1.57	2166366.00	86.8	60 - 125	
45 Sc	427327.6	0.66	501841.66	85.2	60 - 125	
45 Sc	3025230.3	0.37	3450345.50	87.7	60 - 125	
72 Ge	548513.9	0.36	592763.38	92.5	60 - 125	
72 Ge	245449.2	0.84	268634.34	91.4	60 - 125	
72 Ge	737218.9	1.11	803485.44	91.8	60 - 125	
115 In	5519908.0	1.85	5602625.50	98.5	60 - 125	
159 Tb	6223942.5	2.60	6271103.00	99.2	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed

0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Fail

ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09040.D\F6E09040.D#
Date Acquired: May 19 2016 05:10 pm
Operator: MMendo
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 19 2016 02:55 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.60 ppb	1.96	25.00	90 - 110	
9 Be	26.24 ppb	1.53	25.00	90 - 110	
11 B	51.14 ppb	2.34	50.00	90 - 110	
23 Na	25410.00 ppb	1.58	25000.00	90 - 110	
24 Mg	24000.00 ppb	2.28	25000.00	90 - 110	
27 Al	24760.00 ppb	2.44	25000.00	90 - 110	
28 Si	2688.00 ppb	0.65	2500.00	90 - 110	
31 P	251.50 ppb	1.76	250.00	90 - 110	
39 K	25830.00 ppb	0.75	25000.00	90 - 110	
40 Ca	25950.00 ppb	0.55	25000.00	90 - 110	
47 Ti	247.80 ppb	0.45	250.00	90 - 110	
51 V	257.60 ppb	1.02	250.00	90 - 110	
52 Cr	248.40 ppb	0.75	250.00	90 - 110	
55 Mn	1520.00 ppb	0.99	1500.00	90 - 110	
56 Fe	23840.00 ppb	1.15	25000.00	90 - 110	
59 Co	238.50 ppb	0.73	250.00	90 - 110	
60 Ni	242.60 ppb	0.30	250.00	90 - 110	
63 Cu	242.50 ppb	0.58	250.00	90 - 110	
66 Zn	255.30 ppb	1.89	250.00	90 - 110	
75 As	257.90 ppb	0.48	250.00	90 - 110	
78 Se	247.80 ppb	0.81	250.00	90 - 110	
88 Sr	252.70 ppb	0.76	250.00	90 - 110	
90 Zr	27.10 ppb	2.94	25.00	90 - 110	
95 Mo	277.00 ppb	2.24	250.00	90 - 110	Fail
107 Ag	27.10 ppb	3.64	25.00	90 - 110	
111 Cd	259.70 ppb	0.15	250.00	90 - 110	
118 Sn	253.30 ppb	0.84	250.00	90 - 110	
121 Sb	253.50 ppb	2.27	250.00	90 - 110	
137 Ba	513.90 ppb	3.29	500.00	90 - 110	
182 W	23.91 ppb	0.09	25.00	90 - 110	
205 Tl	236.20 ppb	0.93	250.00	90 - 110	
208 Pb	241.90 ppb	1.20	250.00	90 - 110	
235 U	1.39 ppb	3.17	1.80	90 - 110	Fail
238 U	223.40 ppb	3.05	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	642551.88	0.47	843026.13	76.2	60 - 125	
45 Sc	2212113.50	1.57	2166366.00	102.1	60 - 125	
45 Sc	472819.25	0.43	501841.66	94.2	60 - 125	
45 Sc	3412688.50	1.03	3450345.50	98.9	60 - 125	
72 Ge	545836.38	0.59	592763.38	92.1	60 - 125	
72 Ge	240650.86	0.19	268634.34	89.6	60 - 125	
72 Ge	753298.13	2.25	803485.44	93.8	60 - 125	
115 In	4806777.00	2.09	5602625.50	85.8	60 - 125	
159 Tb	5305630.50	1.38	6271103.00	84.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09041.D\F6E09041.D#
Date Acquired:	May 19 2016 05:14 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	CCB3
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0086	ppb	42947.5	718.99	0.20	
9 Be	-0.0025	ppb	18.9	71.20	0.10	
11 B	0.2503	ppb	1436.8	20.66	5.00	
23 Na	-4.1620	ppb	65879.8	9.56	40.00	
24 Mg	0.5254	ppb	19527.7	17.09	10.00	
27 Al	0.3344	ppb	19877.3	37.29	20.00	
28 Si	1.4630	ppb	5739.1	10.56	20.00	
31 P	0.0687	ppb	18816.8	156.69	10.00	
39 K	17.8600	ppb	133565.0	4.00	20.00	
40 Ca	2.6670	ppb	150904.4	14.08	25.00	
47 Ti	0.0108	ppb	155.6	113.32	0.50	
51 V	0.0887	ppb	5648.5	14.32	0.50	
52 Cr	-0.0078	ppb	1180.1	39.09	0.20	
55 Mn	0.0186	ppb	3472.7	48.21	0.20	
56 Fe	2.9630	ppb	65509.8	8.85	10.00	
59 Co	0.0030	ppb	373.4	72.50	0.20	
60 Ni	0.0119	ppb	83.1	9.21	0.20	
63 Cu	0.0267	ppb	1711.2	19.42	0.40	
66 Zn	0.7073	ppb	4665.3	0.39	2.00	
75 As	0.0390	ppb	180.0	25.73	0.20	
78 Se	0.0436	ppb	36.4	26.27	0.20	
88 Sr	0.0008	ppb	1317.9	335.45	0.20	
90 Zr	0.0048	ppb	336.7	11.66	2.00	
95 Mo	0.0656	ppb	593.4	17.10	0.40	
107 Ag	0.0010	ppb	44.4	37.94	0.20	
111 Cd	0.0016	ppb	20.3	142.96	0.20	
118 Sn	0.0354	ppb	586.7	16.22	0.20	
121 Sb	0.1887	ppb	3639.5	12.53	0.40	
137 Ba	0.0260	ppb	278.9	10.80	0.20	
182 W	0.0084	ppb	212.2	35.43	1.00	
205 Tl	0.0042	ppb	270.0	41.22	0.20	
208 Pb	0.0035	ppb	934.5	52.13	0.10	
235 U	0.0003	ppb	21.1	35.82	1.00	
238 U	0.0103	ppb	513.4	24.99	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	671224.6	1.51	843026.13	79.6	60 - 125	
45 Sc	2164502.5	2.24	2166366.00	99.9	60 - 125	
45 Sc	474259.9	0.48	501841.66	94.5	60 - 125	
45 Sc	3437251.8	1.26	3450345.50	99.6	60 - 125	
72 Ge	565959.7	1.29	592763.38	95.5	60 - 125	
72 Ge	248924.9	0.60	268634.34	92.7	60 - 125	
72 Ge	774171.2	0.16	803485.44	96.4	60 - 125	
115 In	5371197.5	0.86	5602625.50	95.9	60 - 125	
159 Tb	5710597.5	0.81	6271103.00	91.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09042.D\F6E09042.D#
Date Acquired:	May 19 2016 05:18 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	IME024SB
Misc Info:	
Vial Number:	2405
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	MBS
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1687	ppb	43001.6	123.06	0.50	
9 Be	-0.0027	ppb	17.8	145.01	0.50	
11 B	0.1349	ppb	1173.4	19.36	10.00	
23 Na	-3.8420	ppb	66278.3	7.03	100.00	
24 Mg	1.3350	ppb	30112.0	3.27	100.00	
27 Al	5.8980	ppb	119460.9	1.96	100.00	
28 Si	3.1220	ppb	8476.0	5.71	50.00	
31 P	7.9850	ppb	26968.3	3.15	10.00	
39 K	17.6800	ppb	134223.2	6.53	100.00	
40 Ca	27.9600	ppb	465119.9	2.27	100.00	
47 Ti	0.0681	ppb	277.8	13.48	0.50	
51 V	0.2157	ppb	6740.3	2.78	0.50	
52 Cr	0.0403	ppb	1639.4	9.23	0.50	
55 Mn	0.0581	ppb	4876.5	7.18	0.50	
56 Fe	3.1830	ppb	68180.5	2.27	100.00	
59 Co	0.0005	ppb	295.6	299.80	0.50	
60 Ni	0.0892	ppb	333.1	10.18	0.50	
63 Cu	0.1995	ppb	3136.4	0.54	0.50	
66 Zn	1.4660	ppb	7915.8	3.59	2.00	
75 As	0.0329	ppb	173.1	6.63	0.50	
78 Se	0.0051	ppb	10.7	83.21	0.50	
88 Sr	0.0258	ppb	2415.8	3.84	0.50	
90 Zr	0.0133	ppb	547.8	5.69	5.00	
95 Mo	0.0298	ppb	303.3	7.96	0.50	
107 Ag	0.0021	ppb	66.7	37.36	0.50	
111 Cd	0.0015	ppb	20.1	289.10	0.50	
118 Sn	3.3770	ppb	44415.3	1.70	20.00	
121 Sb	0.0875	ppb	2022.4	7.32	0.50	
137 Ba	0.0391	ppb	365.6	6.48	0.50	
182 W	0.0046	ppb	166.7	10.87	2.00	
205 Tl	-0.0003	ppb	141.1	194.09	0.50	
208 Pb	0.0091	ppb	1159.0	16.83	0.50	
235 U	0.0000	ppb	12.2	407.61	---	
238 U	0.0018	ppb	178.9	17.49	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	655682.9	2.25	843026.13	77.8	60 - 125	
45 Sc	2125248.8	1.55	2166366.00	98.1	60 - 125	
45 Sc	477447.1	0.47	501841.66	95.1	60 - 125	
45 Sc	3430888.0	2.03	3450345.50	99.4	60 - 125	
72 Ge	558959.2	1.31	592763.38	94.3	60 - 125	
72 Ge	251547.2	1.06	268634.34	93.6	60 - 125	
72 Ge	771315.6	1.55	803485.44	96.0	60 - 125	
115 In	5438343.5	1.25	5602625.50	97.1	60 - 125	
159 Tb	5762253.0	0.62	6271103.00	91.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

LCS QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09043.D\F6E09043.D#
Date Acquired: May 19 2016 05:22 pm
Operator: MMendo
Sample Name: IME024SL
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: LCSS
Final Dil Factor: 1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	309113.41	45.60	ppb	3.81	40.00	80 - 120	
9 Be	114242.60	47.23	ppb	4.44	40.00	80 - 120	
11 B	80515.80	44.58	ppb	6.01	40.00	80 - 120	
23 Na	19632570.00	4129.00	ppb	0.43	4000.00	80 - 120	
24 Mg	51636968.00	4054.00	ppb	1.95	4000.00	80 - 120	
27 Al	71475608.00	4114.00	ppb	1.14	4000.00	80 - 120	
28 Si	9250.02	3.80	ppb	5.53	4000.00	80 - 120	Fail
31 P	26131.08	7.96	ppb	2.20	400.00	80 - 120	Fail
39 K	5857353.00	4391.00	ppb	0.61	4000.00	80 - 120	
40 Ca	52476488.00	4355.00	ppb	0.30	4000.00	80 - 120	
47 Ti	87767.28	42.07	ppb	1.51	40.00	80 - 120	
51 V	348345.50	42.61	ppb	0.78	40.00	80 - 120	
52 Cr	381647.31	41.68	ppb	0.97	40.00	80 - 120	
55 Mn	1521559.00	43.91	ppb	2.76	40.00	80 - 120	
56 Fe	71601080.00	4190.00	ppb	1.26	4000.00	80 - 120	
59 Co	1250882.00	41.78	ppb	2.16	40.00	80 - 120	
60 Ni	134553.20	42.89	ppb	0.23	40.00	80 - 120	
63 Cu	344521.19	43.17	ppb	0.63	40.00	80 - 120	
66 Zn	350918.41	84.40	ppb	0.58	80.00	80 - 120	
75 As	58507.00	42.24	ppb	0.49	40.00	80 - 120	
78 Se	26020.93	41.49	ppb	0.64	40.00	80 - 120	
88 Sr	1913432.00	45.11	ppb	0.48	40.00	80 - 120	
90 Zr	1476.80	0.05	ppb	8.46	30.00	80 - 120	Fail
95 Mo	328222.50	41.28	ppb	1.81	40.00	80 - 120	
107 Ag	872423.50	45.51	ppb	0.72	40.00	80 - 120	
111 Cd	179499.41	40.24	ppb	1.70	40.00	80 - 120	
118 Sn	547356.88	43.66	ppb	1.48	40.00	80 - 120	
121 Sb	628690.50	39.96	ppb	0.52	40.00	80 - 120	
137 Ba	241929.41	39.74	ppb	0.74	40.00	80 - 120	
182 W	256.68	0.01	ppb	18.37	40.00	80 - 120	Fail
205 Tl	1062444.00	38.21	ppb	0.36	40.00	80 - 120	
208 Pb	1417950.00	37.72	ppb	0.98	40.00	80 - 120	
235 U	9844.06	0.23	ppb	0.87	0.28	80 - 120	
238 U	1448390.00	37.81	ppb	1.12	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	587656.69	4.64	843026.13	69.7	60 - 125	
45 Sc	2039791.90	1.61	2166366.00	94.2	60 - 125	
45 Sc	463929.00	0.60	501841.66	92.4	60 - 125	
45 Sc	3327225.00	1.64	3450345.50	96.4	60 - 125	
72 Ge	533762.00	1.21	592763.38	90.0	60 - 125	
72 Ge	241917.47	0.37	268634.34	90.1	60 - 125	
72 Ge	741479.13	0.30	803485.44	92.3	60 - 125	
115 In	5198788.50	1.40	5602625.50	92.8	60 - 125	
159 Tb	5569249.50	0.21	6271103.00	88.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09044.D\F6E09044.D#
Date Acquired: May 19 2016 05:27 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-12M
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	390817.3	0.0000	69.8900	ppb	0.71	50.00	>LRS
9 Be	# 3	6	102320.0	0.0000	49.1100	ppb	2.16	50.00	
11 B	# 3	6	90817.4	0.0000	58.4800	ppb	1.98	100.00	
23 Na	# 1	45	20178490.0	0.0000	4168.0000	ppb	1.61	50000.00	
24 Mg	# 3	45	107622200.0	0.0000	8587.0000	ppb	1.08	50000.00	
27 Al	# 3	45	461180190.0	0.0000	26980.0000	ppb	0.77	50000.00	
28 Si	# 1	45	8995771.0	0.0000	5372.0000	ppb	2.04	5000.00	>LRS
31 P	# 3	45	366421.4	0.0000	353.3000	ppb	0.87	500.00	
39 K	# 2	45	11426240.0	0.0000	8815.0000	ppb	0.39	50000.00	
40 Ca	# 1	45	1714839000.0	0.0000	140100.0000	ppb	2.41	50000.00	>LRS
47 Ti	# 3	45	822227.1	0.0000	400.9000	ppb	3.00	500.00	
51 V	# 2	45	651516.0	0.0000	81.8200	ppb	2.16	500.00	
52 Cr	# 2	45	546572.3	0.0000	60.9300	ppb	1.26	500.00	
55 Mn	# 3	45	11030810.0	0.0000	323.9000	ppb	1.92	3000.00	
56 Fe	# 1	45	371565410.0	0.0000	21350.0000	ppb	0.76	50000.00	
59 Co	# 3	45	1321131.0	0.0000	44.8300	ppb	2.41	500.00	
60 Ni	# 2	45	173337.5	0.0000	56.3500	ppb	1.78	500.00	
63 Cu	# 2	45	387415.3	0.0000	49.5400	ppb	2.14	500.00	
66 Zn	# 3	72	545585.0	0.0000	140.4000	ppb	0.38	500.00	
75 As	# 2	72	62137.9	0.0000	47.6700	ppb	0.66	500.00	
78 Se	# 1	72	23682.1	0.0000	39.8700	ppb	1.06	500.00	
88 Sr	# 3	72	9058761.0	0.0000	228.1000	ppb	1.32	500.00	
90 Zr	# 3	72	211814.7	0.0000	9.4250	ppb	3.03	50.00	
95 Mo	# 3	115	275873.9	0.0000	38.9000	ppb	0.66	500.00	
107 Ag	# 3	115	740158.4	0.0000	43.2900	ppb	1.86	50.00	
111 Cd	# 3	115	156966.0	0.0000	39.4400	ppb	1.07	500.00	
118 Sn	# 3	115	487481.2	0.0000	43.5900	ppb	1.94	500.00	
121 Sb	# 3	115	245271.6	0.0000	17.4600	ppb	2.26	500.00	
137 Ba	# 3	115	2937821.0	0.0000	541.4000	ppb	2.52	1000.00	
182 W	# 3	159	2082.5	0.0000	0.1769	ppb	1.53	50.00	
205 Tl	# 3	159	932865.0	0.0000	36.3800	ppb	0.46	500.00	
208 Pb	# 3	159	1845625.0	0.0000	53.2500	ppb	0.50	500.00	
235 U	# 3	159	9274.7	0.0000	0.2341	ppb	0.82	30.00	
238 U	# 3	159	1322359.0	0.0000	37.4300	ppb	1.53	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	505592.03	0.61	843026.13	60.0	60 - 125	ISFail
45 Sc # 1	2077107.90	1.26	2166366.00	95.9	60 - 125	
45 Sc # 2	454979.31	1.99	501841.66	90.7	60 - 125	
45 Sc # 3	3274175.00	0.55	3450345.50	94.9	60 - 125	
72 Ge # 1	505628.13	1.08	592763.38	85.3	60 - 125	
72 Ge # 2	227737.13	0.70	268634.34	84.8	60 - 125	
72 Ge # 3	694441.94	1.48	803485.44	86.4	60 - 125	
115 In # 3	4637077.00	1.34	5602625.50	82.8	60 - 125	
159 Tb # 3	5135766.00	0.26	6271103.00	81.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

3 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09045.D\F6E09045.D#
Date Acquired: May 19 2016 05:31 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-12A
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	367159.0	0.0000	64.4000	ppb	0.47	50.00	>LRS
9 Be	# 3	6	101089.9	0.0000	47.9200	ppb	0.88	50.00	
11 B	# 3	6	86406.5	0.0000	54.9300	ppb	1.76	100.00	
23 Na	# 1	45	19488650.0	0.0000	4178.0000	ppb	0.23	50000.00	
24 Mg	# 3	45	107287200.0	0.0000	8609.0000	ppb	0.81	50000.00	
27 Al	# 3	45	377649310.0	0.0000	22220.0000	ppb	0.77	50000.00	
28 Si	# 1	45	7100547.0	0.0000	4401.0000	ppb	1.45	5000.00	
31 P	# 3	45	364051.3	0.0000	353.1000	ppb	0.83	500.00	
39 K	# 2	45	10445500.0	0.0000	8324.0000	ppb	0.98	50000.00	
40 Ca	# 1	45	2413698000.0	0.0000	204600.0000	ppb	1.44	50000.00	>LRS
47 Ti	# 3	45	671091.4	0.0000	329.1000	ppb	1.57	500.00	
51 V	# 2	45	614100.4	0.0000	79.6800	ppb	1.90	500.00	
52 Cr	# 2	45	523335.2	0.0000	60.3000	ppb	1.74	500.00	
55 Mn	# 3	45	10310280.0	0.0000	304.5000	ppb	1.14	3000.00	
56 Fe	# 1	45	330545600.0	0.0000	19710.0000	ppb	0.79	50000.00	
59 Co	# 3	45	1296427.0	0.0000	44.2400	ppb	0.89	500.00	
60 Ni	# 2	45	386891.7	0.0000	130.0000	ppb	1.66	500.00	
63 Cu	# 2	45	897051.2	0.0000	118.8000	ppb	2.15	500.00	
66 Zn	# 3	72	499980.3	0.0000	130.7000	ppb	1.90	500.00	
75 As	# 2	72	61140.6	0.0000	48.7300	ppb	0.40	500.00	
78 Se	# 1	72	23058.9	0.0000	39.8400	ppb	0.94	500.00	
88 Sr	# 3	72	8951541.0	0.0000	229.2000	ppb	1.07	500.00	
90 Zr	# 3	72	131516.8	0.0000	5.9440	ppb	1.88	50.00	
95 Mo	# 3	115	289537.9	0.0000	42.0100	ppb	1.68	500.00	
107 Ag	# 3	115	496286.6	0.0000	29.8600	ppb	0.32	50.00	
111 Cd	# 3	115	148902.8	0.0000	38.5000	ppb	1.08	500.00	
118 Sn	# 3	115	468438.3	0.0000	43.1000	ppb	1.32	500.00	
121 Sb	# 3	115	533184.3	0.0000	39.0900	ppb	0.86	500.00	
137 Ba	# 3	115	2677603.0	0.0000	507.6000	ppb	0.84	1000.00	
182 W	# 3	159	1456.8	0.0000	0.1260	ppb	5.11	50.00	
205 Tl	# 3	159	896827.5	0.0000	36.2700	ppb	1.35	500.00	
208 Pb	# 3	159	2244609.0	0.0000	67.1700	ppb	0.87	500.00	
235 U	# 3	159	8886.6	0.0000	0.2326	ppb	0.98	30.00	
238 U	# 3	159	1275428.0	0.0000	37.4400	ppb	1.15	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	511887.81	0.82	843026.13	60.7	60 - 125	
45 Sc # 1	2001408.10	1.85	2166366.00	92.4	60 - 125	
45 Sc # 2	440188.13	1.14	501841.66	87.7	60 - 125	
45 Sc # 3	3255340.80	0.39	3450345.50	94.3	60 - 125	
72 Ge # 1	492610.09	1.12	592763.38	83.1	60 - 125	
72 Ge # 2	219208.36	0.83	268634.34	81.6	60 - 125	
72 Ge # 3	683175.13	1.49	803485.44	85.0	60 - 125	
115 In # 3	4507143.50	1.27	5602625.50	80.4	60 - 125	
159 Tb # 3	4952925.00	1.40	6271103.00	79.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09046.D\F6E09046.D#
Date Acquired: May 19 2016 05:35 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-12D
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	142558.5	0.0000	21.0600	ppb	1.21	50.00	
9 Be	# 3	6	2658.1	0.0000	1.2470	ppb	7.53	50.00	
11 B	# 3	6	19970.4	0.0000	12.3100	ppb	2.31	100.00	
23 Na	# 1	45	1764495.0	0.0000	358.8000	ppb	0.61	50000.00	
24 Mg	# 3	45	63256440.0	0.0000	5000.0000	ppb	2.07	50000.00	
27 Al	# 3	45	326740290.0	0.0000	18940.0000	ppb	1.59	50000.00	
28 Si	# 1	45	7195177.0	0.0000	4416.0000	ppb	0.68	5000.00	
31 P	# 3	45	347463.9	0.0000	330.8000	ppb	0.92	500.00	
39 K	# 2	45	5621815.0	0.0000	4316.0000	ppb	0.96	50000.00	
40 Ca	# 1	45	1854089000.0	0.0000	155600.0000	ppb	0.94	50000.00	>LRS
47 Ti	# 3	45	628286.4	0.0000	303.5000	ppb	1.44	500.00	
51 V	# 2	45	314804.9	0.0000	39.4000	ppb	0.75	500.00	
52 Cr	# 2	45	171684.8	0.0000	19.1300	ppb	0.28	500.00	
55 Mn	# 3	45	8599241.0	0.0000	250.2000	ppb	1.74	3000.00	
56 Fe	# 1	45	277278400.0	0.0000	16370.0000	ppb	0.45	50000.00	
59 Co	# 3	45	197662.1	0.0000	6.6370	ppb	0.75	500.00	
60 Ni	# 2	45	50379.2	0.0000	16.4400	ppb	1.19	500.00	
63 Cu	# 2	45	93330.6	0.0000	11.8500	ppb	0.93	500.00	
66 Zn	# 3	72	220676.6	0.0000	56.7800	ppb	0.69	500.00	
75 As	# 2	72	8625.9	0.0000	6.5710	ppb	0.87	500.00	
78 Se	# 1	72	226.4	0.0000	0.3737	ppb	5.52	500.00	
88 Sr	# 3	72	8358336.0	0.0000	211.4000	ppb	0.95	500.00	
90 Zr	# 3	72	146518.7	0.0000	6.5420	ppb	1.17	50.00	
95 Mo	# 3	115	4178.5	0.0000	0.5778	ppb	0.52	500.00	
107 Ag	# 3	115	13485.8	0.0000	0.7810	ppb	2.13	50.00	
111 Cd	# 3	115	2508.5	0.0000	0.6226	ppb	4.54	500.00	
118 Sn	# 3	115	45540.1	0.0000	4.0300	ppb	0.47	500.00	
121 Sb	# 3	115	4205.2	0.0000	0.2621	ppb	4.07	500.00	
137 Ba	# 3	115	2917037.0	0.0000	533.1000	ppb	0.61	1000.00	
182 W	# 3	159	1479.0	0.0000	0.1250	ppb	8.86	50.00	
205 Tl	# 3	159	5479.1	0.0000	0.2113	ppb	4.39	500.00	
208 Pb	# 3	159	660654.5	0.0000	19.3200	ppb	1.79	500.00	
235 U	# 3	159	188.9	0.0000	0.0046	ppb	24.17	30.00	
238 U	# 3	159	24258.8	0.0000	0.6937	ppb	4.00	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	513605.81	1.20	843026.13	60.9	60 - 125	
45 Sc # 1	2021138.10	1.61	2166366.00	93.3	60 - 125	
45 Sc # 2	452870.66	0.68	501841.66	90.2	60 - 125	
45 Sc # 3	3305079.80	1.18	3450345.50	95.8	60 - 125	
72 Ge # 1	501027.75	1.29	592763.38	84.5	60 - 125	
72 Ge # 2	226759.42	0.41	268634.34	84.4	60 - 125	
72 Ge # 3	691624.69	0.21	803485.44	86.1	60 - 125	
115 In # 3	4675079.50	0.83	5602625.50	83.4	60 - 125	
159 Tb # 3	5065742.50	1.38	6271103.00	80.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09047.D\F6E09047.D#
Date Acquired:	May 19 2016 05:40 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	E082-12
Misc Info:	
Vial Number:	2410
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	130238.9	0.0000	19.4900	ppb	1.26	50.00	
9 Be	# 3	6	2385.8	0.0000	1.1540	ppb	5.98	50.00	
11 B	# 3	6	17890.0	0.0000	11.3400	ppb	2.53	100.00	
23 Na	# 1	45	1269027.0	0.0000	324.6000	ppb	1.47	50000.00	
24 Mg	# 3	45	61066380.0	0.0000	4987.0000	ppb	2.04	50000.00	
27 Al	# 3	45	302553410.0	0.0000	18120.0000	ppb	2.13	50000.00	
28 Si	# 1	45	5527158.0	0.0000	4289.0000	ppb	2.39	5000.00	
31 P	# 3	45	352060.6	0.0000	347.2000	ppb	1.23	500.00	
39 K	# 2	45	4977672.0	0.0000	4018.0000	ppb	0.15	50000.00	
40 Ca	# 1	45	1836882000.0	0.0000	194900.0000	ppb	2.10	50000.00	>LRS
47 Ti	# 3	45	574862.6	0.0000	286.9000	ppb	0.99	500.00	
51 V	# 2	45	290753.5	0.0000	38.3000	ppb	0.89	500.00	
52 Cr	# 2	45	181317.0	0.0000	21.3000	ppb	0.76	500.00	
55 Mn	# 3	45	8833394.0	0.0000	265.5000	ppb	1.68	3000.00	
56 Fe	# 1	45	212417900.0	0.0000	15850.0000	ppb	1.34	50000.00	
59 Co	# 3	45	204523.7	0.0000	7.0950	ppb	1.26	500.00	
60 Ni	# 2	45	264771.7	0.0000	91.0600	ppb	0.79	500.00	
63 Cu	# 2	45	90208.4	0.0000	12.0600	ppb	1.24	500.00	
66 Zn	# 3	72	209571.0	0.0000	55.8900	ppb	0.18	500.00	
75 As	# 2	72	8289.5	0.0000	6.6730	ppb	1.80	500.00	
78 Se	# 1	72	186.7	0.0000	0.3794	ppb	7.89	500.00	
88 Sr	# 3	72	7167951.0	0.0000	187.9000	ppb	1.67	500.00	
90 Zr	# 3	72	129306.7	0.0000	5.9840	ppb	1.47	50.00	
95 Mo	# 3	115	5231.1	0.0000	0.7569	ppb	2.24	500.00	
107 Ag	# 3	115	11062.4	0.0000	0.6684	ppb	0.75	50.00	
111 Cd	# 3	115	2270.1	0.0000	0.5878	ppb	5.01	500.00	
118 Sn	# 3	115	44994.0	0.0000	4.1550	ppb	1.74	500.00	
121 Sb	# 3	115	4351.9	0.0000	0.2858	ppb	2.46	500.00	
137 Ba	# 3	115	2440974.0	0.0000	465.5000	ppb	0.64	1000.00	
182 W	# 3	159	1296.8	0.0000	0.1116	ppb	2.49	50.00	
205 Tl	# 3	159	5205.6	0.0000	0.2061	ppb	3.98	500.00	
208 Pb	# 3	159	982885.3	0.0000	29.5100	ppb	0.45	500.00	
235 U	# 3	159	183.3	0.0000	0.0046	ppb	13.21	30.00	
238 U	# 3	159	22789.6	0.0000	0.6687	ppb	0.33	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	497770.03	1.68	843026.13	59.0	60 - 125	ISFail
45 Sc # 1	1600808.30	10.57	2166366.00	73.9	60 - 125	
45 Sc # 2	430045.69	1.16	501841.66	85.7	60 - 125	
45 Sc # 3	3199272.80	1.29	3450345.50	92.7	60 - 125	
72 Ge # 1	405489.44	6.92	592763.38	68.4	60 - 125	
72 Ge # 2	214623.53	0.96	268634.34	79.9	60 - 125	
72 Ge # 3	667195.88	0.18	803485.44	83.0	60 - 125	
115 In # 3	4479892.50	0.89	5602625.50	80.0	60 - 125	
159 Tb # 3	4934463.50	1.04	6271103.00	78.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09048.D\F6E09048.D#
Date Acquired: May 19 2016 05:44 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-12J
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	58020.8	0.0000	3.6450	ppb	15.19	50.00	
9 Be	# 3	6	525.6	0.0000	0.2123	ppb	8.04	50.00	
11 B	# 3	6	4703.1	0.0000	2.2280	ppb	2.15	100.00	
23 Na	# 1	45	335954.3	0.0000	60.6300	ppb	1.78	50000.00	
24 Mg	# 3	45	13080090.0	0.0000	1054.0000	ppb	5.01	50000.00	
27 Al	# 3	45	64309620.0	0.0000	3801.0000	ppb	3.85	50000.00	
28 Si	# 1	45	1345294.0	0.0000	896.6000	ppb	0.76	5000.00	
31 P	# 3	45	88997.6	0.0000	73.0500	ppb	1.53	500.00	
39 K	# 2	45	1184297.0	0.0000	872.2000	ppb	1.54	50000.00	
40 Ca	# 1	45	435756000.0	0.0000	39780.0000	ppb	0.29	50000.00	
47 Ti	# 3	45	121675.5	0.0000	59.8900	ppb	0.43	500.00	
51 V	# 2	45	65183.9	0.0000	7.9330	ppb	0.49	500.00	
52 Cr	# 2	45	39170.9	0.0000	4.3930	ppb	0.90	500.00	
55 Mn	# 3	45	1958900.0	0.0000	58.0500	ppb	0.85	3000.00	
56 Fe	# 1	45	51866848.0	0.0000	3333.0000	ppb	1.78	50000.00	
59 Co	# 3	45	44737.8	0.0000	1.5250	ppb	1.36	500.00	
60 Ni	# 2	45	58446.2	0.0000	19.6500	ppb	0.41	500.00	
63 Cu	# 2	45	22794.3	0.0000	2.8430	ppb	1.91	500.00	
66 Zn	# 3	72	51260.3	0.0000	12.3000	ppb	2.47	500.00	
75 As	# 2	72	1853.9	0.0000	1.3220	ppb	2.97	500.00	
78 Se	# 1	72	47.3	0.0000	0.0721	ppb	14.81	500.00	
88 Sr	# 3	72	1562562.0	0.0000	37.7000	ppb	0.78	500.00	
90 Zr	# 3	72	26307.0	0.0000	1.1150	ppb	3.00	50.00	
95 Mo	# 3	115	1197.9	0.0000	0.1525	ppb	1.77	500.00	
107 Ag	# 3	115	2443.6	0.0000	0.1334	ppb	4.45	50.00	
111 Cd	# 3	115	492.8	0.0000	0.1139	ppb	8.72	500.00	
118 Sn	# 3	115	9988.3	0.0000	0.8314	ppb	3.59	500.00	
121 Sb	# 3	115	1449.0	0.0000	0.0619	ppb	9.38	500.00	
137 Ba	# 3	115	491625.0	0.0000	85.3500	ppb	2.55	1000.00	
182 W	# 3	159	360.0	0.0000	0.0232	ppb	9.97	50.00	
205 Tl	# 3	159	1153.4	0.0000	0.0393	ppb	7.14	500.00	
208 Pb	# 3	159	210332.5	0.0000	5.9890	ppb	3.14	500.00	
235 U	# 3	159	51.1	0.0000	0.0010	ppb	32.96	30.00	
238 U	# 3	159	4855.5	0.0000	0.1332	ppb	3.74	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	575785.75	3.10	843026.13	68.3	60 - 125	
45 Sc # 1	1858324.80	4.94	2166366.00	85.8	60 - 125	
45 Sc # 2	439677.06	1.03	501841.66	87.6	60 - 125	
45 Sc # 3	3241062.50	1.31	3450345.50	93.9	60 - 125	
72 Ge # 1	485204.78	2.94	592763.38	81.9	60 - 125	
72 Ge # 2	230224.00	1.50	268634.34	85.7	60 - 125	
72 Ge # 3	724393.44	1.83	803485.44	90.2	60 - 125	
115 In # 3	4921927.50	1.70	5602625.50	87.9	60 - 125	
159 Tb # 3	5191171.50	2.47	6271103.00	82.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09049.D\F6E09049.D#
Date Acquired: May 19 2016 05:48 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-01
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	184408.7	0.0000	31.3400	ppb	1.63	50.00	
9 Be	# 3	6	3432.7	0.0000	1.7150	ppb	3.15	50.00	
11 B	# 3	6	20929.5	0.0000	13.7600	ppb	1.26	100.00	
23 Na	# 1	45	461945.9	0.0000	78.9900	ppb	2.11	50000.00	
24 Mg	# 3	45	63122620.0	0.0000	4834.0000	ppb	1.28	50000.00	
27 Al	# 3	45	499828700.0	0.0000	28070.0000	ppb	0.62	50000.00	
28 Si	# 1	45	7768052.0	0.0000	4660.0000	ppb	0.76	5000.00	
31 P	# 3	45	386626.3	0.0000	358.1000	ppb	0.91	500.00	
39 K	# 2	45	8230820.0	0.0000	6322.0000	ppb	0.62	50000.00	
40 Ca	# 1	45	337638020.0	0.0000	27700.0000	ppb	2.27	50000.00	
47 Ti	# 3	45	975758.0	0.0000	456.8000	ppb	1.83	500.00	
51 V	# 2	45	443771.9	0.0000	55.4800	ppb	0.58	500.00	
52 Cr	# 2	45	242976.9	0.0000	26.9900	ppb	1.18	500.00	
55 Mn	# 3	45	13607650.0	0.0000	383.6000	ppb	1.62	3000.00	
56 Fe	# 1	45	433017220.0	0.0000	25000.0000	ppb	0.13	50000.00	
59 Co	# 3	45	260162.0	0.0000	8.4680	ppb	1.51	500.00	
60 Ni	# 2	45	65344.4	0.0000	21.2200	ppb	0.31	500.00	
63 Cu	# 2	45	132929.8	0.0000	16.8600	ppb	0.59	500.00	
66 Zn	# 3	72	262928.3	0.0000	65.3400	ppb	1.30	500.00	
75 As	# 2	72	11833.0	0.0000	8.9210	ppb	2.60	500.00	
78 Se	# 1	72	327.3	0.0000	0.5348	ppb	2.28	500.00	
88 Sr	# 3	72	3435422.0	0.0000	83.8100	ppb	2.21	500.00	
90 Zr	# 3	72	174258.9	0.0000	7.5080	ppb	0.35	50.00	
95 Mo	# 3	115	5722.4	0.0000	0.7690	ppb	2.66	500.00	
107 Ag	# 3	115	9177.7	0.0000	0.5146	ppb	2.56	50.00	
111 Cd	# 3	115	2956.2	0.0000	0.7113	ppb	1.70	500.00	
118 Sn	# 3	115	45852.6	0.0000	3.9320	ppb	0.98	500.00	
121 Sb	# 3	115	4632.1	0.0000	0.2822	ppb	2.02	500.00	
137 Ba	# 3	115	1442759.0	0.0000	255.5000	ppb	1.36	1000.00	
182 W	# 3	159	1379.0	0.0000	0.1115	ppb	5.95	50.00	
205 Tl	# 3	159	7992.7	0.0000	0.2996	ppb	1.39	500.00	
208 Pb	# 3	159	584899.8	0.0000	16.4900	ppb	1.09	500.00	
235 U	# 3	159	181.1	0.0000	0.0042	ppb	16.61	30.00	
238 U	# 3	159	21548.4	0.0000	0.5938	ppb	3.44	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	483022.22	1.31	843026.13	57.3	60 - 125	ISFail
45 Sc # 1	2067640.40	1.93	2166366.00	95.4	60 - 125	
45 Sc # 2	455318.91	0.18	501841.66	90.7	60 - 125	
45 Sc # 3	3410778.80	1.10	3450345.50	98.9	60 - 125	
72 Ge # 1	510630.25	1.21	592763.38	86.1	60 - 125	
72 Ge # 2	229952.27	1.42	268634.34	85.6	60 - 125	
72 Ge # 3	716750.00	0.63	803485.44	89.2	60 - 125	
115 In # 3	4823942.50	0.55	5602625.50	86.1	60 - 125	
159 Tb # 3	5252458.50	0.93	6271103.00	83.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09050.D\F6E09050.D#
Date Acquired: May 19 2016 05:53 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-02
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	175634.7	0.0000	30.1900	ppb	0.28	50.00	
9 Be	# 3	6	2695.9	0.0000	1.3690	ppb	3.67	50.00	
11 B	# 3	6	20082.9	0.0000	13.4300	ppb	2.55	100.00	
23 Na	# 1	45	504670.9	0.0000	92.1900	ppb	0.72	50000.00	
24 Mg	# 3	45	77897688.0	0.0000	6165.0000	ppb	0.79	50000.00	
27 Al	# 3	45	400222210.0	0.0000	23230.0000	ppb	1.68	50000.00	
28 Si	# 1	45	7110311.0	0.0000	4440.0000	ppb	0.28	5000.00	
31 P	# 3	45	324037.0	0.0000	307.8000	ppb	1.23	500.00	
39 K	# 2	45	5930690.0	0.0000	4695.0000	ppb	1.03	50000.00	
40 Ca	# 1	45	912796030.0	0.0000	77960.0000	ppb	0.99	50000.00	>LRS
47 Ti	# 3	45	756586.1	0.0000	366.1000	ppb	4.47	500.00	
51 V	# 2	45	351324.1	0.0000	45.3700	ppb	1.09	500.00	
52 Cr	# 2	45	188440.5	0.0000	21.6400	ppb	1.29	500.00	
55 Mn	# 3	45	10415810.0	0.0000	303.4000	ppb	0.41	3000.00	
56 Fe	# 1	45	323002400.0	0.0000	19410.0000	ppb	1.00	50000.00	
59 Co	# 3	45	201763.7	0.0000	6.7840	ppb	1.57	500.00	
60 Ni	# 2	45	50686.9	0.0000	17.0400	ppb	1.57	500.00	
63 Cu	# 2	45	114633.8	0.0000	15.0300	ppb	0.93	500.00	
66 Zn	# 3	72	226132.3	0.0000	57.1400	ppb	0.15	500.00	
75 As	# 2	72	8678.2	0.0000	6.6740	ppb	1.36	500.00	
78 Se	# 1	72	269.1	0.0000	0.4515	ppb	11.56	500.00	
88 Sr	# 3	72	7076292.0	0.0000	175.7000	ppb	1.09	500.00	
90 Zr	# 3	72	150515.0	0.0000	6.6000	ppb	1.81	50.00	
95 Mo	# 3	115	4665.4	0.0000	0.6466	ppb	2.82	500.00	
107 Ag	# 3	115	19610.8	0.0000	1.1380	ppb	4.17	50.00	
111 Cd	# 3	115	2364.0	0.0000	0.5870	ppb	8.03	500.00	
118 Sn	# 3	115	48120.2	0.0000	4.2640	ppb	2.19	500.00	
121 Sb	# 3	115	4040.7	0.0000	0.2507	ppb	4.33	500.00	
137 Ba	# 3	115	2531639.0	0.0000	463.2000	ppb	2.38	1000.00	
182 W	# 3	159	1143.4	0.0000	0.0962	ppb	2.13	50.00	
205 Tl	# 3	159	6114.9	0.0000	0.2402	ppb	0.34	500.00	
208 Pb	# 3	159	540999.9	0.0000	16.0500	ppb	2.44	500.00	
235 U	# 3	159	212.2	0.0000	0.0053	ppb	8.87	30.00	
238 U	# 3	159	23327.0	0.0000	0.6769	ppb	2.83	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	474470.03	0.83	843026.13	56.3	60 - 125	ISFail
45 Sc # 1	1986117.60	0.63	2166366.00	91.7	60 - 125	
45 Sc # 2	439772.66	1.27	501841.66	87.6	60 - 125	
45 Sc # 3	3300866.00	1.58	3450345.50	95.7	60 - 125	
72 Ge # 1	495088.22	0.41	592763.38	83.5	60 - 125	
72 Ge # 2	224639.22	0.15	268634.34	83.6	60 - 125	
72 Ge # 3	704256.50	0.62	803485.44	87.7	60 - 125	
115 In # 3	4669412.50	0.24	5602625.50	83.3	60 - 125	
159 Tb # 3	4991480.00	1.69	6271103.00	79.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09051.D\F6E09051.D#
Date Acquired:	May 19 2016 05:58 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	E082-03
Misc Info:	
Vial Number:	2502
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	93625.5	0.0000	11.8700	ppb	0.86	50.00	
9 Be	# 3	6	1327.9	0.0000	0.6249	ppb	6.88	50.00	
11 B	# 3	6	10064.7	0.0000	6.0510	ppb	3.19	100.00	
23 Na	# 1	45	11150060.0	0.0000	2520.0000	ppb	1.29	50000.00	
24 Mg	# 3	45	55269368.0	0.0000	4594.0000	ppb	0.81	50000.00	
27 Al	# 3	45	196650210.0	0.0000	11980.0000	ppb	1.70	50000.00	
28 Si	# 1	45	6481220.0	0.0000	4246.0000	ppb	0.91	5000.00	
31 P	# 3	45	321018.6	0.0000	321.0000	ppb	0.76	500.00	
39 K	# 2	45	2506939.0	0.0000	2037.0000	ppb	1.02	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	287651.1	0.0000	146.1000	ppb	0.89	500.00	
51 V	# 2	45	171274.4	0.0000	22.9200	ppb	0.89	500.00	
52 Cr	# 2	45	81498.1	0.0000	9.7490	ppb	0.70	500.00	
55 Mn	# 3	45	2293359.0	0.0000	70.1000	ppb	0.53	3000.00	
56 Fe	# 1	45	134881700.0	0.0000	8504.0000	ppb	0.70	50000.00	
59 Co	# 3	45	157038.6	0.0000	5.5450	ppb	2.61	500.00	
60 Ni	# 2	45	35070.3	0.0000	12.3600	ppb	0.80	500.00	
63 Cu	# 2	45	49024.1	0.0000	6.6450	ppb	1.14	500.00	
66 Zn	# 3	72	78597.6	0.0000	22.0600	ppb	0.79	500.00	
75 As	# 2	72	7827.0	0.0000	6.6230	ppb	2.30	500.00	
78 Se	# 1	72	152.9	0.0000	0.2775	ppb	1.66	500.00	
88 Sr	# 3	72	11033030.0	0.0000	307.5000	ppb	1.34	500.00	
90 Zr	# 3	72	39145.6	0.0000	1.9200	ppb	5.61	50.00	
95 Mo	# 3	115	1785.7	0.0000	0.2757	ppb	2.87	500.00	
107 Ag	# 3	115	617.8	0.0000	0.0392	ppb	9.35	50.00	
111 Cd	# 3	115	1361.1	0.0000	0.3808	ppb	7.34	500.00	
118 Sn	# 3	115	28937.2	0.0000	2.8930	ppb	1.23	500.00	
121 Sb	# 3	115	3307.2	0.0000	0.2291	ppb	2.69	500.00	
137 Ba	# 3	115	1751596.0	0.0000	361.9000	ppb	0.50	1000.00	
182 W	# 3	159	1255.7	0.0000	0.1195	ppb	4.57	50.00	
205 Tl	# 3	159	3307.2	0.0000	0.1425	ppb	0.88	500.00	
208 Pb	# 3	159	155006.0	0.0000	5.1050	ppb	1.00	500.00	
235 U	# 3	159	123.3	0.0000	0.0033	ppb	20.35	30.00	
238 U	# 3	159	15333.9	0.0000	0.4944	ppb	0.97	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	507832.28	1.33	843026.13	60.2	60 - 125	
45 Sc # 1	1893085.10	0.57	2166366.00	87.4	60 - 125	
45 Sc # 2	419104.50	0.61	501841.66	83.5	60 - 125	
45 Sc # 3	3142520.00	1.17	3450345.50	91.1	60 - 125	
72 Ge # 1	450921.41	1.19	592763.38	76.1	60 - 125	
72 Ge # 2	204170.09	1.32	268634.34	76.0	60 - 125	
72 Ge # 3	627551.69	0.38	803485.44	78.1	60 - 125	
115 In # 3	4134602.50	0.25	5602625.50	73.8	60 - 125	
159 Tb # 3	4483565.00	0.88	6271103.00	71.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09052.D\F6E09052.D#
Date Acquired: May 19 2016 06:02 pm
Operator: MMendo
Sample Name: CCV4
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 19 2016 02:55 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	27.71 ppb	7.72	25.00	90 - 110	Fail
9 Be	28.11 ppb	8.66	25.00	90 - 110	Fail
11 B	53.52 ppb	10.79	50.00	90 - 110	
23 Na	24620.00 ppb	2.30	25000.00	90 - 110	
24 Mg	23700.00 ppb	4.97	25000.00	90 - 110	
27 Al	24770.00 ppb	2.25	25000.00	90 - 110	
28 Si	2640.00 ppb	1.09	2500.00	90 - 110	
31 P	255.60 ppb	0.13	250.00	90 - 110	
39 K	26690.00 ppb	0.73	25000.00	90 - 110	
40 Ca	25700.00 ppb	0.25	25000.00	90 - 110	
47 Ti	248.70 ppb	1.67	250.00	90 - 110	
51 V	257.10 ppb	0.20	250.00	90 - 110	
52 Cr	249.20 ppb	1.08	250.00	90 - 110	
55 Mn	1498.00 ppb	3.24	1500.00	90 - 110	
56 Fe	24090.00 ppb	0.06	25000.00	90 - 110	
59 Co	233.70 ppb	3.42	250.00	90 - 110	
60 Ni	244.80 ppb	0.92	250.00	90 - 110	
63 Cu	246.10 ppb	1.05	250.00	90 - 110	
66 Zn	253.30 ppb	2.97	250.00	90 - 110	
75 As	258.00 ppb	0.97	250.00	90 - 110	
78 Se	248.30 ppb	0.46	250.00	90 - 110	
88 Sr	251.30 ppb	0.26	250.00	90 - 110	
90 Zr	27.14 ppb	3.28	25.00	90 - 110	
95 Mo	278.00 ppb	1.53	250.00	90 - 110	Fail
107 Ag	26.96 ppb	1.44	25.00	90 - 110	
111 Cd	248.70 ppb	3.07	250.00	90 - 110	
118 Sn	257.20 ppb	1.27	250.00	90 - 110	
121 Sb	253.70 ppb	2.36	250.00	90 - 110	
137 Ba	514.90 ppb	1.75	500.00	90 - 110	
182 W	23.16 ppb	0.41	25.00	90 - 110	
205 Tl	226.90 ppb	1.21	250.00	90 - 110	
208 Pb	229.60 ppb	2.06	250.00	90 - 110	
235 U	1.35 ppb	2.08	1.80	90 - 110	Fail
238 U	215.90 ppb	1.81	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	575014.81	8.69	843026.13	68.2	60 - 125	
45 Sc	2044085.40	0.27	2166366.00	94.4	60 - 125	
45 Sc	451921.03	0.76	501841.66	90.1	60 - 125	
45 Sc	3387228.50	2.28	3450345.50	98.2	60 - 125	
72 Ge	506999.22	0.37	592763.38	85.5	60 - 125	
72 Ge	230593.17	0.89	268634.34	85.8	60 - 125	
72 Ge	719979.00	2.98	803485.44	89.6	60 - 125	
115 In	4596878.50	0.54	5602625.50	82.0	60 - 125	
159 Tb	4907958.50	1.40	6271103.00	78.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09053.D\F6E09053.D#
Date Acquired: May 19 2016 06:06 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: CCB4
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.4079	ppb	40737.8	122.48	0.20	Fail
9 Be	-0.0021	ppb	17.8	87.52	0.10	
11 B	0.2536	ppb	1290.1	12.36	5.00	
23 Na	-5.2930	ppb	58608.1	6.15	40.00	
24 Mg	1.0340	ppb	25766.0	10.96	10.00	
27 Al	0.2411	ppb	17882.4	51.80	20.00	
28 Si	2.5310	ppb	7397.6	8.32	20.00	
31 P	0.2171	ppb	18647.4	90.47	10.00	
39 K	30.2200	ppb	145539.6	5.43	20.00	Fail
40 Ca	2.1570	ppb	140602.0	6.55	25.00	
47 Ti	0.0179	ppb	167.8	27.16	0.50	
51 V	0.1247	ppb	5763.6	4.40	0.50	
52 Cr	-0.0045	ppb	1173.6	37.47	0.20	
55 Mn	0.0178	ppb	3387.2	45.92	0.20	
56 Fe	3.0540	ppb	65276.8	11.92	10.00	
59 Co	0.0041	ppb	400.0	34.88	0.20	
60 Ni	0.0200	ppb	105.8	4.32	0.20	
63 Cu	0.0221	ppb	1622.1	20.23	0.40	
66 Zn	0.7295	ppb	4603.1	6.44	2.00	
75 As	0.0473	ppb	185.1	11.72	0.20	
78 Se	0.0396	ppb	32.4	11.26	0.20	
88 Sr	-0.0021	ppb	1151.2	97.34	0.20	
90 Zr	0.0043	ppb	314.5	42.95	2.00	
95 Mo	0.0619	ppb	531.1	16.75	0.40	
107 Ag	0.0014	ppb	50.0	55.95	0.20	
111 Cd	0.0032	ppb	26.4	242.35	0.20	
118 Sn	0.0359	ppb	560.0	8.82	0.20	
121 Sb	0.1602	ppb	2993.8	8.27	0.40	
137 Ba	0.0210	ppb	233.3	10.80	0.20	
182 W	0.0104	ppb	217.8	10.77	1.00	
205 Tl	0.0036	ppb	232.2	27.20	0.20	
208 Pb	0.0025	ppb	821.2	62.56	0.10	
235 U	0.0003	ppb	20.0	105.83	1.00	
238 U	0.0087	ppb	414.5	20.92	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	600066.4	4.53	843026.13	71.2	60 - 125	
45 Sc	2106889.3	1.48	2166366.00	97.3	60 - 125	
45 Sc	459701.6	2.24	501841.66	91.6	60 - 125	
45 Sc	3378792.5	0.29	3450345.50	97.9	60 - 125	
72 Ge	544868.4	0.88	592763.38	91.9	60 - 125	
72 Ge	240092.6	1.09	268634.34	89.4	60 - 125	
72 Ge	748534.1	1.02	803485.44	93.2	60 - 125	
115 In	5061481.0	0.70	5602625.50	90.3	60 - 125	
159 Tb	5249873.0	1.55	6271103.00	83.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09054.D\F6E09054.D#
Date Acquired:	May 19 2016 06:10 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	E082-04
Misc Info:	
Vial Number:	2503
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	136061.8	0.0000	19.3300	ppb	1.10	50.00	
9 Be	# 3	6	1631.3	0.0000	0.7476	ppb	4.27	50.00	
11 B	# 3	6	12893.6	0.0000	7.6330	ppb	1.49	100.00	
23 Na	# 1	45	2457205.0	0.0000	512.2000	ppb	1.23	50000.00	
24 Mg	# 3	45	75111640.0	0.0000	5880.0000	ppb	2.14	50000.00	
27 Al	# 3	45	218595100.0	0.0000	12550.0000	ppb	2.54	50000.00	
28 Si	# 1	45	7042055.0	0.0000	4368.0000	ppb	0.54	5000.00	
31 P	# 3	45	169960.3	0.0000	150.9000	ppb	2.24	500.00	
39 K	# 2	45	3933073.0	0.0000	3091.0000	ppb	0.43	50000.00	
40 Ca	# 1	45	3035268100.0	0.0000	257500.0000	ppb	0.76	50000.00	>LRS
47 Ti	# 3	45	465366.4	0.0000	222.6000	ppb	0.68	500.00	
51 V	# 2	45	228374.0	0.0000	29.3300	ppb	1.18	500.00	
52 Cr	# 2	45	98551.7	0.0000	11.2700	ppb	0.30	500.00	
55 Mn	# 3	45	4568262.0	0.0000	131.6000	ppb	3.21	3000.00	
56 Fe	# 1	45	178350800.0	0.0000	10640.0000	ppb	1.08	50000.00	
59 Co	# 3	45	128471.4	0.0000	4.2710	ppb	4.99	500.00	
60 Ni	# 2	45	35724.5	0.0000	12.0200	ppb	0.62	500.00	
63 Cu	# 2	45	34323.7	0.0000	4.3790	ppb	1.15	500.00	
66 Zn	# 3	72	97775.7	0.0000	26.3200	ppb	1.07	500.00	
75 As	# 2	72	5719.4	0.0000	4.5860	ppb	1.23	500.00	
78 Se	# 1	72	104.7	0.0000	0.1762	ppb	8.47	500.00	
88 Sr	# 3	72	9589536.0	0.0000	255.6000	ppb	0.14	500.00	
90 Zr	# 3	72	179751.9	0.0000	8.4620	ppb	1.45	50.00	
95 Mo	# 3	115	2346.9	0.0000	0.3421	ppb	4.76	500.00	
107 Ag	# 3	115	676.7	0.0000	0.0404	ppb	11.15	50.00	
111 Cd	# 3	115	1656.5	0.0000	0.4358	ppb	2.26	500.00	
118 Sn	# 3	115	30775.6	0.0000	2.8910	ppb	1.98	500.00	
121 Sb	# 3	115	3698.4	0.0000	0.2425	ppb	4.00	500.00	
137 Ba	# 3	115	752813.8	0.0000	146.2000	ppb	1.22	1000.00	
182 W	# 3	159	1123.4	0.0000	0.1037	ppb	5.69	50.00	
205 Tl	# 3	159	3212.7	0.0000	0.1354	ppb	1.14	500.00	
208 Pb	# 3	159	211009.0	0.0000	6.8180	ppb	1.22	500.00	
235 U	# 3	159	193.3	0.0000	0.0052	ppb	28.66	30.00	
238 U	# 3	159	25712.6	0.0000	0.8144	ppb	0.53	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	523246.28	1.42	843026.13	62.1	60 - 125	
45 Sc # 1	1999684.10	1.31	2166366.00	92.3	60 - 125	
45 Sc # 2	439120.72	0.61	501841.66	87.5	60 - 125	
45 Sc # 3	3337857.00	2.31	3450345.50	96.7	60 - 125	
72 Ge # 1	475333.84	1.33	592763.38	80.2	60 - 125	
72 Ge # 2	214190.64	0.84	268634.34	79.7	60 - 125	
72 Ge # 3	656097.31	0.29	803485.44	81.7	60 - 125	
115 In # 3	4400503.00	0.44	5602625.50	78.5	60 - 125	
159 Tb # 3	4574500.50	0.78	6271103.00	72.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09055.D\F6E09055.D#
Date Acquired: May 19 2016 06:15 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-05
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	119455.0	0.0000	17.5400	ppb	1.78	50.00	
9 Be	# 3	6	2542.5	0.0000	1.2410	ppb	5.40	50.00	
11 B	# 3	6	13236.1	0.0000	8.3400	ppb	0.62	100.00	
23 Na	# 1	45	1041445.0	0.0000	199.5000	ppb	3.50	50000.00	
24 Mg	# 3	45	54410512.0	0.0000	4305.0000	ppb	0.36	50000.00	
27 Al	# 3	45	288685890.0	0.0000	16750.0000	ppb	0.93	50000.00	
28 Si	# 1	45	7221586.0	0.0000	4328.0000	ppb	1.61	5000.00	
31 P	# 3	45	601305.0	0.0000	586.5000	ppb	0.67	500.00	>LRS
39 K	# 2	45	4428299.0	0.0000	3442.0000	ppb	0.81	50000.00	
40 Ca	# 1	45	1448516000.0	0.0000	118700.0000	ppb	0.79	50000.00	>LRS
47 Ti	# 3	45	530346.9	0.0000	256.5000	ppb	0.55	500.00	
51 V	# 2	45	311161.2	0.0000	39.6200	ppb	0.71	500.00	
52 Cr	# 2	45	150089.8	0.0000	17.0000	ppb	1.00	500.00	
55 Mn	# 3	45	9129028.0	0.0000	265.9000	ppb	1.27	3000.00	
56 Fe	# 1	45	270369090.0	0.0000	15590.0000	ppb	0.39	50000.00	
59 Co	# 3	45	204389.0	0.0000	6.8720	ppb	0.66	500.00	
60 Ni	# 2	45	49129.1	0.0000	16.3100	ppb	0.14	500.00	
63 Cu	# 2	45	167811.7	0.0000	21.8200	ppb	1.22	500.00	
66 Zn	# 3	72	213378.0	0.0000	54.8900	ppb	0.64	500.00	
75 As	# 2	72	9236.9	0.0000	7.1440	ppb	0.71	500.00	
78 Se	# 1	72	555.8	0.0000	0.9301	ppb	2.66	500.00	
88 Sr	# 3	72	6496254.0	0.0000	164.3000	ppb	0.32	500.00	
90 Zr	# 3	72	92041.3	0.0000	4.1070	ppb	1.70	50.00	
95 Mo	# 3	115	6158.2	0.0000	0.8742	ppb	2.65	500.00	
107 Ag	# 3	115	4771.0	0.0000	0.2817	ppb	1.36	50.00	
111 Cd	# 3	115	2061.1	0.0000	0.5225	ppb	2.93	500.00	
118 Sn	# 3	115	43762.6	0.0000	3.9600	ppb	0.75	500.00	
121 Sb	# 3	115	4957.7	0.0000	0.3232	ppb	1.73	500.00	
137 Ba	# 3	115	2117610.0	0.0000	395.8000	ppb	1.63	1000.00	
182 W	# 3	159	1413.5	0.0000	0.1244	ppb	5.76	50.00	
205 Tl	# 3	159	5095.6	0.0000	0.2049	ppb	3.91	500.00	
208 Pb	# 3	159	385383.0	0.0000	11.7400	ppb	0.51	500.00	
235 U	# 3	159	234.5	0.0000	0.0060	ppb	6.29	30.00	
238 U	# 3	159	29380.4	0.0000	0.8763	ppb	0.71	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	493858.00	1.21	843026.13	58.6	60 - 125	ISFail
45 Sc # 1	2069243.80	1.12	2166366.00	95.5	60 - 125	
45 Sc # 2	445148.94	0.52	501841.66	88.7	60 - 125	
45 Sc # 3	3300850.50	0.40	3450345.50	95.7	60 - 125	
72 Ge # 1	502802.28	1.00	592763.38	84.8	60 - 125	
72 Ge # 2	223575.91	1.40	268634.34	83.2	60 - 125	
72 Ge # 3	691548.00	1.40	803485.44	86.1	60 - 125	
115 In # 3	4571485.00	0.24	5602625.50	81.6	60 - 125	
159 Tb # 3	4859042.00	0.54	6271103.00	77.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09056.D\F6E09056.D#
Date Acquired: May 19 2016 06:21 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-06
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	101715.7	0.0000	13.2200	ppb	3.18	50.00	
9 Be	# 3	6	1519.0	0.0000	0.7082	ppb	5.24	50.00	
11 B	# 3	6	11641.5	0.0000	6.9850	ppb	2.23	100.00	
23 Na	# 1	45	12356850.0	0.0000	2771.0000	ppb	0.13	50000.00	
24 Mg	# 3	45	63163760.0	0.0000	5190.0000	ppb	1.67	50000.00	
27 Al	# 3	45	219937100.0	0.0000	13250.0000	ppb	1.05	50000.00	
28 Si	# 1	45	7279719.0	0.0000	4729.0000	ppb	0.77	5000.00	
31 P	# 3	45	286618.7	0.0000	281.1000	ppb	0.38	500.00	
39 K	# 2	45	2825811.0	0.0000	2273.0000	ppb	0.96	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	327537.2	0.0000	164.5000	ppb	0.30	500.00	
51 V	# 2	45	193014.3	0.0000	25.5300	ppb	1.71	500.00	
52 Cr	# 2	45	88116.5	0.0000	10.4000	ppb	1.18	500.00	
55 Mn	# 3	45	2532272.0	0.0000	76.5200	ppb	1.29	3000.00	
56 Fe	# 1	45	144948500.0	0.0000	9061.0000	ppb	0.46	50000.00	
59 Co	# 3	45	149115.8	0.0000	5.2030	ppb	2.13	500.00	
60 Ni	# 2	45	39055.3	0.0000	13.5800	ppb	1.05	500.00	
63 Cu	# 2	45	48976.6	0.0000	6.5420	ppb	0.75	500.00	
66 Zn	# 3	72	83156.5	0.0000	23.4500	ppb	1.21	500.00	
75 As	# 2	72	8870.9	0.0000	7.6260	ppb	0.97	500.00	
78 Se	# 1	72	137.3	0.0000	0.2517	ppb	10.15	500.00	
88 Sr	# 3	72	12127130.0	0.0000	339.2000	ppb	0.71	500.00	
90 Zr	# 3	72	33312.5	0.0000	1.6390	ppb	2.39	50.00	
95 Mo	# 3	115	2132.5	0.0000	0.3392	ppb	5.04	500.00	
107 Ag	# 3	115	365.6	0.0000	0.0234	ppb	17.71	50.00	
111 Cd	# 3	115	1280.4	0.0000	0.3673	ppb	3.04	500.00	
118 Sn	# 3	115	28853.6	0.0000	2.9570	ppb	1.24	500.00	
121 Sb	# 3	115	3267.2	0.0000	0.2325	ppb	3.79	500.00	
137 Ba	# 3	115	1807910.0	0.0000	383.1000	ppb	2.50	1000.00	
182 W	# 3	159	1266.8	0.0000	0.1251	ppb	9.06	50.00	
205 Tl	# 3	159	3570.6	0.0000	0.1600	ppb	5.92	500.00	
208 Pb	# 3	159	167442.4	0.0000	5.7100	ppb	0.53	500.00	
235 U	# 3	159	131.1	0.0000	0.0037	ppb	35.24	30.00	
238 U	# 3	159	16409.7	0.0000	0.5480	ppb	0.76	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	513608.69	1.68	843026.13	60.9	60 - 125	
45 Sc # 1	1909241.90	1.41	2166366.00	88.1	60 - 125	
45 Sc # 2	425116.66	0.84	501841.66	84.7	60 - 125	
45 Sc # 3	3179170.30	0.43	3450345.50	92.1	60 - 125	
72 Ge # 1	444725.03	0.47	592763.38	75.0	60 - 125	
72 Ge # 2	201289.27	0.44	268634.34	74.9	60 - 125	
72 Ge # 3	625294.63	0.75	803485.44	77.8	60 - 125	
115 In # 3	4033068.80	1.76	5602625.50	72.0	60 - 125	
159 Tb # 3	4331488.50	1.55	6271103.00	69.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09057.D\F6E09057.D#
Date Acquired: May 19 2016 06:27 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-07
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	175411.3	0.0000	27.8300	ppb	1.15	50.00	
9 Be	# 3	6	3849.5	0.0000	1.8350	ppb	3.18	50.00	
11 B	# 3	6	22418.2	0.0000	14.0700	ppb	3.26	100.00	
23 Na	# 1	45	5011630.0	0.0000	1051.0000	ppb	1.18	50000.00	
24 Mg	# 3	45	105971300.0	0.0000	8148.0000	ppb	0.93	50000.00	
27 Al	# 3	45	466657500.0	0.0000	26310.0000	ppb	0.78	50000.00	
28 Si	# 1	45	7662772.0	0.0000	4704.0000	ppb	1.36	5000.00	
31 P	# 3	45	224854.3	0.0000	201.5000	ppb	1.07	500.00	
39 K	# 2	45	6832317.0	0.0000	5292.0000	ppb	0.86	50000.00	
40 Ca	# 1	45	1049823000.0	0.0000	88140.0000	ppb	0.78	50000.00	>LRS
47 Ti	# 3	45	886206.1	0.0000	416.5000	ppb	1.99	500.00	
51 V	# 2	45	394463.1	0.0000	49.8000	ppb	0.39	500.00	
52 Cr	# 2	45	183838.0	0.0000	20.6100	ppb	0.08	500.00	
55 Mn	# 3	45	9654662.0	0.0000	273.2000	ppb	1.26	3000.00	
56 Fe	# 1	45	335393310.0	0.0000	19810.0000	ppb	0.42	50000.00	
59 Co	# 3	45	206119.5	0.0000	6.7330	ppb	1.99	500.00	
60 Ni	# 2	45	60101.8	0.0000	19.7300	ppb	0.79	500.00	
63 Cu	# 2	45	75806.8	0.0000	9.6420	ppb	0.20	500.00	
66 Zn	# 3	72	204816.5	0.0000	52.2200	ppb	0.76	500.00	
75 As	# 2	72	8169.6	0.0000	6.3470	ppb	1.02	500.00	
78 Se	# 1	72	162.0	0.0000	0.2714	ppb	3.03	500.00	
88 Sr	# 3	72	8936251.0	0.0000	224.1000	ppb	0.23	500.00	
90 Zr	# 3	72	359128.3	0.0000	15.9100	ppb	1.08	50.00	
95 Mo	# 3	115	4673.1	0.0000	0.6688	ppb	4.86	500.00	
107 Ag	# 3	115	1034.5	0.0000	0.0607	ppb	4.60	50.00	
111 Cd	# 3	115	2502.1	0.0000	0.6416	ppb	1.34	500.00	
118 Sn	# 3	115	41971.0	0.0000	3.8370	ppb	1.60	500.00	
121 Sb	# 3	115	4329.7	0.0000	0.2811	ppb	1.75	500.00	
137 Ba	# 3	115	12144950.0	0.0000	2293.0000	ppb	0.65	1000.00	>LRS
182 W	# 3	159	984.5	0.0000	0.0883	ppb	9.10	50.00	
205 Tl	# 3	159	6689.7	0.0000	0.2831	ppb	1.11	500.00	
208 Pb	# 3	159	376208.4	0.0000	11.9800	ppb	0.52	500.00	
235 U	# 3	159	202.2	0.0000	0.0054	ppb	13.87	30.00	
238 U	# 3	159	23957.1	0.0000	0.7466	ppb	0.46	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	506585.03	1.50	843026.13	60.1	60 - 125	
45 Sc # 1	2020772.30	1.83	2166366.00	93.3	60 - 125	
45 Sc # 2	450362.91	0.27	501841.66	89.7	60 - 125	
45 Sc # 3	3397315.00	0.73	3450345.50	98.5	60 - 125	
72 Ge # 1	488052.06	1.28	592763.38	82.3	60 - 125	
72 Ge # 2	222229.23	0.13	268634.34	82.7	60 - 125	
72 Ge # 3	697502.56	0.51	803485.44	86.8	60 - 125	
115 In # 3	4524436.00	0.55	5602625.50	80.8	60 - 125	
159 Tb # 3	4647850.00	0.45	6271103.00	74.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09058.D\F6E09058.D#
Date Acquired: May 19 2016 06:31 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-08
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	138651.0	0.0000	20.9100	ppb	1.28	50.00	
9 Be	# 3	6	2688.1	0.0000	1.2900	ppb	9.61	50.00	
11 B	# 3	6	15875.5	0.0000	9.9180	ppb	0.72	100.00	
23 Na	# 1	45	862463.8	0.0000	169.5000	ppb	1.16	50000.00	
24 Mg	# 3	45	60901960.0	0.0000	4718.0000	ppb	0.49	50000.00	
27 Al	# 3	45	378279810.0	0.0000	21490.0000	ppb	0.84	50000.00	
28 Si	# 1	45	7321742.0	0.0000	4565.0000	ppb	1.32	5000.00	
31 P	# 3	45	418639.6	0.0000	394.0000	ppb	0.80	500.00	
39 K	# 2	45	5264920.0	0.0000	4139.0000	ppb	2.03	50000.00	
40 Ca	# 1	45	1718779000.0	0.0000	146600.0000	ppb	1.05	50000.00	>LRS
47 Ti	# 3	45	665189.8	0.0000	315.0000	ppb	0.50	500.00	
51 V	# 2	45	342808.8	0.0000	44.0400	ppb	0.71	500.00	
52 Cr	# 2	45	169101.6	0.0000	19.3200	ppb	0.31	500.00	
55 Mn	# 3	45	12016810.0	0.0000	342.7000	ppb	0.24	3000.00	
56 Fe	# 1	45	307813600.0	0.0000	18470.0000	ppb	0.38	50000.00	
59 Co	# 3	45	202308.3	0.0000	6.6590	ppb	1.03	500.00	
60 Ni	# 2	45	50306.4	0.0000	16.8300	ppb	0.95	500.00	
63 Cu	# 2	45	115782.8	0.0000	15.1100	ppb	0.72	500.00	
66 Zn	# 3	72	201274.4	0.0000	52.2900	ppb	0.73	500.00	
75 As	# 2	72	10907.4	0.0000	8.7990	ppb	0.77	500.00	
78 Se	# 1	72	287.6	0.0000	0.5004	ppb	3.47	500.00	
88 Sr	# 3	72	7104411.0	0.0000	181.5000	ppb	0.50	500.00	
90 Zr	# 3	72	106719.0	0.0000	4.8110	ppb	0.33	50.00	
95 Mo	# 3	115	5250.0	0.0000	0.7722	ppb	2.13	500.00	
107 Ag	# 3	115	3612.8	0.0000	0.2210	ppb	2.00	50.00	
111 Cd	# 3	115	1850.0	0.0000	0.4862	ppb	3.34	500.00	
118 Sn	# 3	115	37633.3	0.0000	3.5310	ppb	0.52	500.00	
121 Sb	# 3	115	4103.0	0.0000	0.2724	ppb	1.16	500.00	
137 Ba	# 3	115	2433431.0	0.0000	471.7000	ppb	1.22	1000.00	
182 W	# 3	159	1239.0	0.0000	0.1131	ppb	3.70	50.00	
205 Tl	# 3	159	5200.1	0.0000	0.2184	ppb	1.16	500.00	
208 Pb	# 3	159	463230.5	0.0000	14.7200	ppb	1.11	500.00	
235 U	# 3	159	158.9	0.0000	0.0042	ppb	22.72	30.00	
238 U	# 3	159	22219.7	0.0000	0.6908	ppb	1.16	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	502235.47	0.30	843026.13	59.6	60 - 125	ISFail
45 Sc # 1	1989368.80	0.75	2166366.00	91.8	60 - 125	
45 Sc # 2	441836.81	0.43	501841.66	88.0	60 - 125	
45 Sc # 3	3371486.50	0.65	3450345.50	97.7	60 - 125	
72 Ge # 1	478539.53	0.69	592763.38	80.7	60 - 125	
72 Ge # 2	214838.88	0.49	268634.34	80.0	60 - 125	
72 Ge # 3	684608.31	0.54	803485.44	85.2	60 - 125	
115 In # 3	4407774.00	0.18	5602625.50	78.7	60 - 125	
159 Tb # 3	4657684.00	0.69	6271103.00	74.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09059.D\F6E09059.D#
Date Acquired: May 19 2016 06:36 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-09
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	145683.2	0.0000	23.1500	ppb	1.50	50.00	
9 Be	# 3	6	2788.1	0.0000	1.3780	ppb	1.42	50.00	
11 B	# 3	6	15560.6	0.0000	10.0200	ppb	1.22	100.00	
23 Na	# 1	45	922475.9	0.0000	181.2000	ppb	1.47	50000.00	
24 Mg	# 3	45	60737192.0	0.0000	4733.0000	ppb	0.42	50000.00	
27 Al	# 3	45	411976190.0	0.0000	23540.0000	ppb	0.79	50000.00	
28 Si	# 1	45	6895967.0	0.0000	4271.0000	ppb	1.37	5000.00	
31 P	# 3	45	494221.9	0.0000	471.3000	ppb	0.63	500.00	
39 K	# 2	45	5674833.0	0.0000	4526.0000	ppb	0.86	50000.00	
40 Ca	# 1	45	1352220000.0	0.0000	114500.0000	ppb	1.82	50000.00	>LRS
47 Ti	# 3	45	751573.6	0.0000	358.0000	ppb	1.27	500.00	
51 V	# 2	45	347312.4	0.0000	45.2200	ppb	1.62	500.00	
52 Cr	# 2	45	189150.9	0.0000	21.9000	ppb	1.06	500.00	
55 Mn	# 3	45	10262540.0	0.0000	294.4000	ppb	2.00	3000.00	
56 Fe	# 1	45	327891490.0	0.0000	19540.0000	ppb	0.84	50000.00	
59 Co	# 3	45	210414.2	0.0000	6.9670	ppb	1.10	500.00	
60 Ni	# 2	45	52905.6	0.0000	17.9300	ppb	0.84	500.00	
63 Cu	# 2	45	144378.6	0.0000	19.1400	ppb	1.32	500.00	
66 Zn	# 3	72	235055.2	0.0000	61.8000	ppb	1.05	500.00	
75 As	# 2	72	9042.4	0.0000	7.2980	ppb	0.42	500.00	
78 Se	# 1	72	368.5	0.0000	0.6505	ppb	4.61	500.00	
88 Sr	# 3	72	5767757.0	0.0000	149.0000	ppb	2.31	500.00	
90 Zr	# 3	72	76549.2	0.0000	3.4870	ppb	2.18	50.00	
95 Mo	# 3	115	5460.1	0.0000	0.8018	ppb	3.08	500.00	
107 Ag	# 3	115	3572.8	0.0000	0.2181	ppb	0.79	50.00	
111 Cd	# 3	115	1834.2	0.0000	0.4811	ppb	2.77	500.00	
118 Sn	# 3	115	44508.8	0.0000	4.1690	ppb	1.10	500.00	
121 Sb	# 3	115	4215.2	0.0000	0.2802	ppb	0.50	500.00	
137 Ba	# 3	115	1870024.0	0.0000	361.7000	ppb	0.97	1000.00	
182 W	# 3	159	1212.3	0.0000	0.1118	ppb	2.99	50.00	
205 Tl	# 3	159	5747.0	0.0000	0.2447	ppb	4.00	500.00	
208 Pb	# 3	159	392736.6	0.0000	12.6200	ppb	1.45	500.00	
235 U	# 3	159	178.9	0.0000	0.0048	ppb	10.26	30.00	
238 U	# 3	159	25081.3	0.0000	0.7889	ppb	0.19	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	487596.88	1.34	843026.13	57.8	60 - 125	ISFail
45 Sc # 1	2003027.30	2.03	2166366.00	92.5	60 - 125	
45 Sc # 2	436245.50	1.59	501841.66	86.9	60 - 125	
45 Sc # 3	3351972.80	0.82	3450345.50	97.1	60 - 125	
72 Ge # 1	474100.97	0.09	592763.38	80.0	60 - 125	
72 Ge # 2	214306.97	1.41	268634.34	79.8	60 - 125	
72 Ge # 3	677211.38	1.29	803485.44	84.3	60 - 125	
115 In # 3	4416615.50	0.34	5602625.50	78.8	60 - 125	
159 Tb # 3	4606243.50	0.98	6271103.00	73.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09060.D\F6E09060.D#
Date Acquired: May 19 2016 06:43 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-10
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	383929.3	0.0000	71.2100	ppb	0.71	50.00	>LRS
9 Be	# 3	6	2301.4	0.0000	1.1350	ppb	4.13	50.00	
11 B	# 3	6	33820.6	0.0000	22.2700	ppb	1.79	100.00	
23 Na	# 1	45	7270838.0	0.0000	1597.0000	ppb	2.10	50000.00	
24 Mg	# 3	45	178464400.0	0.0000	14170.0000	ppb	2.20	50000.00	
27 Al	# 3	45	381741310.0	0.0000	22230.0000	ppb	1.73	50000.00	
28 Si	# 1	45	6957307.0	0.0000	4449.0000	ppb	1.79	5000.00	
31 P	# 3	45	181536.9	0.0000	165.0000	ppb	0.85	500.00	
39 K	# 2	45	5992135.0	0.0000	4851.0000	ppb	0.68	50000.00	
40 Ca	# 1	45	2242010100.0	0.0000	196100.0000	ppb	1.79	50000.00	>LRS
47 Ti	# 3	45	604321.0	0.0000	293.3000	ppb	0.78	500.00	
51 V	# 2	45	322529.4	0.0000	42.5300	ppb	1.40	500.00	
52 Cr	# 2	45	152156.5	0.0000	17.8400	ppb	0.98	500.00	
55 Mn	# 3	45	5177001.0	0.0000	151.3000	ppb	1.31	3000.00	
56 Fe	# 1	45	242249790.0	0.0000	14900.0000	ppb	1.89	50000.00	
59 Co	# 3	45	169393.7	0.0000	5.7130	ppb	1.47	500.00	
60 Ni	# 2	45	42272.8	0.0000	14.5200	ppb	0.64	500.00	
63 Cu	# 2	45	52743.0	0.0000	6.9720	ppb	0.79	500.00	
66 Zn	# 3	72	130097.1	0.0000	35.5000	ppb	0.35	500.00	
75 As	# 2	72	6218.9	0.0000	5.1550	ppb	1.39	500.00	
78 Se	# 1	72	104.2	0.0000	0.1819	ppb	15.67	500.00	
88 Sr	# 3	72	13219130.0	0.0000	355.9000	ppb	0.44	500.00	
90 Zr	# 3	72	314851.2	0.0000	14.9800	ppb	1.03	50.00	
95 Mo	# 3	115	3934.0	0.0000	0.5901	ppb	2.41	500.00	
107 Ag	# 3	115	1053.4	0.0000	0.0650	ppb	9.72	50.00	
111 Cd	# 3	115	1903.3	0.0000	0.5119	ppb	9.95	500.00	
118 Sn	# 3	115	34190.0	0.0000	3.2800	ppb	1.03	500.00	
121 Sb	# 3	115	3687.3	0.0000	0.2476	ppb	5.57	500.00	
137 Ba	# 3	115	3416170.0	0.0000	677.1000	ppb	1.70	1000.00	
182 W	# 3	159	1455.7	0.0000	0.1430	ppb	5.54	50.00	
205 Tl	# 3	159	4250.8	0.0000	0.1886	ppb	3.41	500.00	
208 Pb	# 3	159	239775.5	0.0000	8.0680	ppb	1.06	500.00	
235 U	# 3	159	237.8	0.0000	0.0068	ppb	7.16	30.00	
238 U	# 3	159	33496.9	0.0000	1.1050	ppb	1.17	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	488272.03	0.91	843026.13	57.9	60 - 125	ISFail
45 Sc # 1	1939893.30	0.77	2166366.00	89.5	60 - 125	
45 Sc # 2	430277.50	0.73	501841.66	85.7	60 - 125	
45 Sc # 3	3290102.80	1.23	3450345.50	95.4	60 - 125	
72 Ge # 1	459419.88	0.99	592763.38	77.5	60 - 125	
72 Ge # 2	207630.05	0.57	268634.34	77.3	60 - 125	
72 Ge # 3	649514.94	0.14	803485.44	80.8	60 - 125	
115 In # 3	4310285.00	0.69	5602625.50	76.9	60 - 125	
159 Tb # 3	4395106.00	1.12	6271103.00	70.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09061.D\F6E09061.D#
Date Acquired: May 19 2016 06:48 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-11
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	113288.3	0.0000	15.8900	ppb	1.70	50.00	
9 Be	# 3	6	1266.8	0.0000	0.6018	ppb	1.02	50.00	
11 B	# 3	6	13510.9	0.0000	8.3600	ppb	4.11	100.00	
23 Na	# 1	45	4170370.0	0.0000	960.8000	ppb	0.89	50000.00	
24 Mg	# 3	45	86088416.0	0.0000	7252.0000	ppb	1.23	50000.00	
27 Al	# 3	45	169870100.0	0.0000	10490.0000	ppb	1.59	50000.00	
28 Si	# 1	45	7719912.0	0.0000	5213.0000	ppb	1.03	5000.00	>LRS
31 P	# 3	45	145727.5	0.0000	137.9000	ppb	1.22	500.00	
39 K	# 2	45	2765957.0	0.0000	2322.0000	ppb	1.20	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	308229.2	0.0000	158.7000	ppb	0.47	500.00	
51 V	# 2	45	152531.2	0.0000	20.9400	ppb	0.32	500.00	
52 Cr	# 2	45	69582.1	0.0000	8.5440	ppb	1.34	500.00	
55 Mn	# 3	45	2089312.0	0.0000	64.7200	ppb	1.29	3000.00	
56 Fe	# 1	45	104836200.0	0.0000	6811.0000	ppb	0.32	50000.00	
59 Co	# 3	45	131730.7	0.0000	4.7120	ppb	1.16	500.00	
60 Ni	# 2	45	29198.9	0.0000	10.5800	ppb	1.06	500.00	
63 Cu	# 2	45	24688.8	0.0000	3.3530	ppb	1.22	500.00	
66 Zn	# 3	72	62342.3	0.0000	18.2000	ppb	1.65	500.00	
75 As	# 2	72	5378.4	0.0000	4.8440	ppb	1.76	500.00	
78 Se	# 1	72	80.7	0.0000	0.1504	ppb	13.60	500.00	
88 Sr	# 3	72	19227570.0	0.0000	559.3000	ppb	0.81	500.00	>LRS
90 Zr	# 3	72	121306.0	0.0000	6.2290	ppb	0.31	50.00	
95 Mo	# 3	115	1904.6	0.0000	0.3118	ppb	0.48	500.00	
107 Ag	# 3	115	463.4	0.0000	0.0309	ppb	4.36	50.00	
111 Cd	# 3	115	1240.1	0.0000	0.3667	ppb	1.74	500.00	
118 Sn	# 3	115	26794.1	0.0000	2.8310	ppb	0.46	500.00	
121 Sb	# 3	115	2430.3	0.0000	0.1701	ppb	5.28	500.00	
137 Ba	# 3	115	2185164.0	0.0000	477.4000	ppb	0.42	1000.00	
182 W	# 3	159	1439.0	0.0000	0.1506	ppb	4.19	50.00	
205 Tl	# 3	159	2384.7	0.0000	0.1103	ppb	2.01	500.00	
208 Pb	# 3	159	124594.5	0.0000	4.4470	ppb	0.63	500.00	
235 U	# 3	159	127.8	0.0000	0.0038	ppb	22.41	30.00	
238 U	# 3	159	17385.4	0.0000	0.6086	ppb	2.05	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	503108.84	1.14	843026.13	59.7	60 - 125	ISFail
45 Sc # 1	1837040.00	1.01	2166366.00	84.8	60 - 125	
45 Sc # 2	407541.94	0.98	501841.66	81.2	60 - 125	
45 Sc # 3	3101127.80	1.18	3450345.50	89.9	60 - 125	
72 Ge # 1	425114.72	0.36	592763.38	71.7	60 - 125	
72 Ge # 2	190880.16	0.70	268634.34	71.1	60 - 125	
72 Ge # 3	601291.50	1.14	803485.44	74.8	60 - 125	
115 In # 3	3910832.50	0.23	5602625.50	69.8	60 - 125	
159 Tb # 3	4133967.80	0.82	6271103.00	65.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

3 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09062.D\F6E09062.D#
Date Acquired: May 19 2016 06:52 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-13
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	120518.4	0.0000	18.0800	ppb	4.20	50.00	
9 Be	# 3	6	2608.1	0.0000	1.2900	ppb	4.92	50.00	
11 B	# 3	6	16609.6	0.0000	10.7300	ppb	2.66	100.00	
23 Na	# 1	45	856016.5	0.0000	164.2000	ppb	1.16	50000.00	
24 Mg	# 3	45	38663060.0	0.0000	2942.0000	ppb	0.40	50000.00	
27 Al	# 3	45	340164900.0	0.0000	18980.0000	ppb	1.02	50000.00	
28 Si	# 1	45	5255259.0	0.0000	3207.0000	ppb	0.48	5000.00	
31 P	# 3	45	294218.5	0.0000	266.4000	ppb	0.52	500.00	
39 K	# 2	45	4517283.0	0.0000	3478.0000	ppb	0.76	50000.00	
40 Ca	# 1	45	207274300.0	0.0000	17290.0000	ppb	0.52	50000.00	
47 Ti	# 3	45	726743.1	0.0000	338.0000	ppb	1.21	500.00	
51 V	# 2	45	310330.3	0.0000	39.1300	ppb	0.92	500.00	
52 Cr	# 2	45	178460.9	0.0000	20.0500	ppb	0.90	500.00	
55 Mn	# 3	45	7699420.0	0.0000	215.6000	ppb	2.41	3000.00	
56 Fe	# 1	45	315510500.0	0.0000	18530.0000	ppb	0.78	50000.00	
59 Co	# 3	45	176249.7	0.0000	5.6970	ppb	2.53	500.00	
60 Ni	# 2	45	43778.6	0.0000	14.4000	ppb	1.23	500.00	
63 Cu	# 2	45	110945.2	0.0000	14.2300	ppb	0.69	500.00	
66 Zn	# 3	72	222489.3	0.0000	55.2500	ppb	3.05	500.00	
75 As	# 2	72	8089.8	0.0000	6.2320	ppb	0.39	500.00	
78 Se	# 1	72	244.0	0.0000	0.4104	ppb	6.46	500.00	
88 Sr	# 3	72	2248131.0	0.0000	54.8200	ppb	1.53	500.00	
90 Zr	# 3	72	132869.3	0.0000	5.7250	ppb	2.52	50.00	
95 Mo	# 3	115	5223.3	0.0000	0.7163	ppb	4.48	500.00	
107 Ag	# 3	115	1982.4	0.0000	0.1126	ppb	3.11	50.00	
111 Cd	# 3	115	1909.8	0.0000	0.4683	ppb	0.43	500.00	
118 Sn	# 3	115	39550.0	0.0000	3.4620	ppb	1.28	500.00	
121 Sb	# 3	115	4625.4	0.0000	0.2884	ppb	4.85	500.00	
137 Ba	# 3	115	843452.6	0.0000	152.6000	ppb	1.06	1000.00	
182 W	# 3	159	981.2	0.0000	0.0850	ppb	8.11	50.00	
205 Tl	# 3	159	4865.5	0.0000	0.1979	ppb	2.38	500.00	
208 Pb	# 3	159	750543.4	0.0000	23.1800	ppb	2.86	500.00	
235 U	# 3	159	152.2	0.0000	0.0039	ppb	17.60	30.00	
238 U	# 3	159	17130.7	0.0000	0.5165	ppb	3.06	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	487241.25	0.54	843026.13	57.8	60 - 125	ISFail
45 Sc # 1	2032347.30	1.98	2166366.00	93.8	60 - 125	
45 Sc # 2	449441.34	0.99	501841.66	89.6	60 - 125	
45 Sc # 3	3432833.00	1.03	3450345.50	99.5	60 - 125	
72 Ge # 1	493041.66	0.96	592763.38	83.2	60 - 125	
72 Ge # 2	224043.44	0.27	268634.34	83.4	60 - 125	
72 Ge # 3	716773.38	2.57	803485.44	89.2	60 - 125	
115 In # 3	4723201.00	1.06	5602625.50	84.3	60 - 125	
159 Tb # 3	4796239.50	1.48	6271103.00	76.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09063.D\F6E09063.D#
Date Acquired: May 19 2016 06:56 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-14
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	93926.2	0.0000	12.2300	ppb	1.16	50.00	
9 Be	# 3	6	1439.0	0.0000	0.6898	ppb	8.05	50.00	
11 B	# 3	6	19066.9	0.0000	12.0700	ppb	1.22	100.00	
23 Na	# 1	45	1633646.0	0.0000	345.2000	ppb	1.30	50000.00	
24 Mg	# 3	45	43085192.0	0.0000	3475.0000	ppb	1.64	50000.00	
27 Al	# 3	45	172757600.0	0.0000	10220.0000	ppb	1.59	50000.00	
28 Si	# 1	45	4248745.0	0.0000	2713.0000	ppb	1.49	5000.00	
31 P	# 3	45	232757.2	0.0000	220.4000	ppb	0.99	500.00	
39 K	# 2	45	2554231.0	0.0000	2058.0000	ppb	0.56	50000.00	
40 Ca	# 1	45	1946550000.0	0.0000	170000.0000	ppb	1.43	50000.00	>LRS
47 Ti	# 3	45	443802.7	0.0000	218.8000	ppb	1.03	500.00	
51 V	# 2	45	215243.6	0.0000	28.6900	ppb	0.44	500.00	
52 Cr	# 2	45	101279.3	0.0000	12.0400	ppb	0.31	500.00	
55 Mn	# 3	45	12170210.0	0.0000	361.4000	ppb	1.22	3000.00	
56 Fe	# 1	45	173211600.0	0.0000	10640.0000	ppb	1.07	50000.00	
59 Co	# 3	45	129821.7	0.0000	4.4460	ppb	0.48	500.00	
60 Ni	# 2	45	31091.1	0.0000	10.8600	ppb	0.73	500.00	
63 Cu	# 2	45	131546.6	0.0000	17.9800	ppb	0.42	500.00	
66 Zn	# 3	72	174849.0	0.0000	47.7600	ppb	0.09	500.00	
75 As	# 2	72	8263.9	0.0000	6.8700	ppb	0.15	500.00	
78 Se	# 1	72	252.4	0.0000	0.4454	ppb	8.77	500.00	
88 Sr	# 3	72	9186613.0	0.0000	246.9000	ppb	0.30	500.00	
90 Zr	# 3	72	128568.9	0.0000	6.1010	ppb	0.92	50.00	
95 Mo	# 3	115	4447.5	0.0000	0.6704	ppb	2.59	500.00	
107 Ag	# 3	115	2412.5	0.0000	0.1510	ppb	5.14	50.00	
111 Cd	# 3	115	2682.8	0.0000	0.7250	ppb	4.58	500.00	
118 Sn	# 3	115	39178.4	0.0000	3.7730	ppb	1.02	500.00	
121 Sb	# 3	115	4528.7	0.0000	0.3133	ppb	1.26	500.00	
137 Ba	# 3	115	2335531.0	0.0000	464.6000	ppb	2.59	1000.00	
182 W	# 3	159	1782.4	0.0000	0.1751	ppb	10.67	50.00	
205 Tl	# 3	159	2587.0	0.0000	0.1115	ppb	2.17	500.00	
208 Pb	# 3	159	1923891.0	0.0000	64.2200	ppb	0.55	500.00	
235 U	# 3	159	210.0	0.0000	0.0059	ppb	17.63	30.00	
238 U	# 3	159	22669.2	0.0000	0.7396	ppb	2.39	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	499625.56	0.90	843026.13	59.3	60 - 125	ISFail
45 Sc # 1	1942063.50	1.59	2166366.00	89.6	60 - 125	
45 Sc # 2	422908.00	0.69	501841.66	84.3	60 - 125	
45 Sc # 3	3238302.30	0.66	3450345.50	93.9	60 - 125	
72 Ge # 1	470919.22	1.01	592763.38	79.4	60 - 125	
72 Ge # 2	207898.66	0.84	268634.34	77.4	60 - 125	
72 Ge # 3	650674.19	0.70	803485.44	81.0	60 - 125	
115 In # 3	4295013.50	0.92	5602625.50	76.7	60 - 125	
159 Tb # 3	4440031.50	0.51	6271103.00	70.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09064.D\F6E09064.D#
Date Acquired: May 19 2016 07:01 pm
Operator: MMendo
Sample Name: CCV5
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 19 2016 02:55 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	28.01 ppb	1.31	25.00	90 - 110	Fail
9 Be	28.33 ppb	1.10	25.00	90 - 110	Fail
11 B	55.01 ppb	1.88	50.00	90 - 110	Fail
23 Na	24360.00 ppb	1.85	25000.00	90 - 110	
24 Mg	23920.00 ppb	1.57	25000.00	90 - 110	
27 Al	24840.00 ppb	1.35	25000.00	90 - 110	
28 Si	2649.00 ppb	0.76	2500.00	90 - 110	
31 P	256.70 ppb	0.68	250.00	90 - 110	
39 K	26980.00 ppb	0.48	25000.00	90 - 110	
40 Ca	25780.00 ppb	1.32	25000.00	90 - 110	
47 Ti	245.10 ppb	0.48	250.00	90 - 110	
51 V	258.20 ppb	0.33	250.00	90 - 110	
52 Cr	251.30 ppb	0.26	250.00	90 - 110	
55 Mn	1468.00 ppb	0.83	1500.00	90 - 110	
56 Fe	24050.00 ppb	0.62	25000.00	90 - 110	
59 Co	228.50 ppb	1.76	250.00	90 - 110	
60 Ni	243.20 ppb	1.13	250.00	90 - 110	
63 Cu	241.20 ppb	1.76	250.00	90 - 110	
66 Zn	246.00 ppb	4.13	250.00	90 - 110	
75 As	258.60 ppb	0.43	250.00	90 - 110	
78 Se	245.90 ppb	0.24	250.00	90 - 110	
88 Sr	254.90 ppb	1.07	250.00	90 - 110	
90 Zr	27.46 ppb	2.57	25.00	90 - 110	
95 Mo	280.30 ppb	1.10	250.00	90 - 110	Fail
107 Ag	26.41 ppb	2.20	25.00	90 - 110	
111 Cd	241.10 ppb	2.79	250.00	90 - 110	
118 Sn	253.80 ppb	0.10	250.00	90 - 110	
121 Sb	253.70 ppb	0.38	250.00	90 - 110	
137 Ba	509.20 ppb	0.28	500.00	90 - 110	
182 W	21.99 ppb	0.89	25.00	90 - 110	Fail
205 Tl	233.40 ppb	2.10	250.00	90 - 110	
208 Pb	219.20 ppb	2.49	250.00	90 - 110	Fail
235 U	1.26 ppb	0.80	1.80	90 - 110	Fail
238 U	204.10 ppb	0.58	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	527603.19	0.41	843026.13	62.6	60 - 125	
45 Sc	1915901.40	1.13	2166366.00	88.4	60 - 125	
45 Sc	426392.72	0.95	501841.66	85.0	60 - 125	
45 Sc	3313482.30	0.76	3450345.50	96.0	60 - 125	
72 Ge	473240.97	0.85	592763.38	79.8	60 - 125	
72 Ge	214537.53	0.55	268634.34	79.9	60 - 125	
72 Ge	686249.31	1.99	803485.44	85.4	60 - 125	
115 In	4370076.00	1.35	5602625.50	78.0	60 - 125	
159 Tb	4478227.50	1.34	6271103.00	71.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

8 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\E\IF6E09.B\F6E09065.D\F6E09065.D#
Date Acquired:	May 19 2016 07:05 pm
Acq. Method:	EMX6020H.M
Operator:	MMendo
Sample Name:	CCB5
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update:	May 19 2016 02:55 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.6503	ppb	37806.5	13.33	0.20	Fail
9 Be	0.0033	ppb	27.8	140.15	0.10	
11 B	0.3152	ppb	1254.5	22.50	5.00	
23 Na	-6.1600	ppb	50407.7	3.80	40.00	
24 Mg	0.7733	ppb	21819.7	7.48	10.00	
27 Al	0.3334	ppb	19017.1	37.10	20.00	
28 Si	1.7180	ppb	5580.1	1.10	20.00	
31 P	0.8158	ppb	18762.3	52.38	10.00	
39 K	40.2300	ppb	149668.7	4.29	20.00	Fail
40 Ca	2.4820	ppb	134070.2	12.66	25.00	
47 Ti	0.0029	ppb	132.2	477.26	0.50	
51 V	0.1531	ppb	5656.5	4.73	0.50	
52 Cr	-0.0137	ppb	1029.8	41.05	0.20	
55 Mn	0.0194	ppb	3356.1	14.90	0.20	
56 Fe	2.9290	ppb	58480.8	6.63	10.00	
59 Co	0.0030	ppb	357.8	57.51	0.20	
60 Ni	0.0103	ppb	71.1	15.68	0.20	
63 Cu	0.0189	ppb	1508.5	34.32	0.40	
66 Zn	0.7043	ppb	4273.0	4.70	2.00	
75 As	0.0449	ppb	168.7	20.56	0.20	
78 Se	0.0376	ppb	28.4	14.59	0.20	
88 Sr	0.0010	ppb	1220.1	110.74	0.20	
90 Zr	0.0058	ppb	332.2	40.28	2.00	
95 Mo	0.0661	ppb	543.4	11.64	0.40	
107 Ag	0.0004	ppb	30.0	49.23	0.20	
111 Cd	0.0052	ppb	33.3	213.83	0.20	
118 Sn	0.0379	ppb	563.4	8.86	0.20	
121 Sb	0.1342	ppb	2503.6	9.02	0.40	
137 Ba	0.0192	ppb	214.5	24.92	0.20	
182 W	0.0100	ppb	194.5	5.21	1.00	
205 Tl	0.0056	ppb	258.9	35.48	0.20	
208 Pb	0.0043	ppb	806.7	28.79	0.10	
235 U	0.0006	ppb	31.1	52.30	1.00	
238 U	0.0122	ppb	491.1	5.06	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	536259.6	0.34	843026.13	63.6	60 - 125	
45 Sc	1953265.4	1.98	2166366.00	90.2	60 - 125	
45 Sc	434119.9	0.74	501841.66	86.5	60 - 125	
45 Sc	3291669.0	1.11	3450345.50	95.4	60 - 125	
72 Ge	496822.8	0.71	592763.38	83.8	60 - 125	
72 Ge	222870.1	0.56	268634.34	83.0	60 - 125	
72 Ge	710979.8	0.56	803485.44	88.5	60 - 125	
115 In	4882651.0	0.70	5602625.50	87.1	60 - 125	
159 Tb	4784674.5	0.94	6271103.00	76.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09066.D\F6E09066.D#
Date Acquired: May 19 2016 07:09 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-15
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	118247.9	0.0000	17.9600	ppb	1.25	50.00	
9 Be	# 3	6	2026.9	0.0000	1.0140	ppb	3.31	50.00	
11 B	# 3	6	15919.9	0.0000	10.4200	ppb	4.28	100.00	
23 Na	# 1	45	1375164.0	0.0000	285.7000	ppb	2.39	50000.00	
24 Mg	# 3	45	49628848.0	0.0000	3952.0000	ppb	2.16	50000.00	
27 Al	# 3	45	277602210.0	0.0000	16210.0000	ppb	1.46	50000.00	
28 Si	# 1	45	6232636.0	0.0000	3953.0000	ppb	1.25	5000.00	
31 P	# 3	45	392615.6	0.0000	379.1000	ppb	0.89	500.00	
39 K	# 2	45	4691364.0	0.0000	3793.0000	ppb	0.38	50000.00	
40 Ca	# 1	45	1337074900.0	0.0000	116000.0000	ppb	1.41	50000.00	>LRS
47 Ti	# 3	45	563271.6	0.0000	274.1000	ppb	0.93	500.00	
51 V	# 2	45	270689.3	0.0000	35.7200	ppb	0.42	500.00	
52 Cr	# 2	45	145663.6	0.0000	17.1300	ppb	0.77	500.00	
55 Mn	# 3	45	9709368.0	0.0000	284.6000	ppb	0.73	3000.00	
56 Fe	# 1	45	244387100.0	0.0000	14920.0000	ppb	0.36	50000.00	
59 Co	# 3	45	171505.8	0.0000	5.8010	ppb	0.77	500.00	
60 Ni	# 2	45	40476.3	0.0000	13.9500	ppb	0.60	500.00	
63 Cu	# 2	45	116511.8	0.0000	15.6700	ppb	0.36	500.00	
66 Zn	# 3	72	278431.4	0.0000	74.0900	ppb	1.12	500.00	
75 As	# 2	72	8393.6	0.0000	6.8720	ppb	1.32	500.00	
78 Se	# 1	72	282.4	0.0000	0.5017	ppb	2.41	500.00	
88 Sr	# 3	72	8154097.0	0.0000	212.9000	ppb	1.09	500.00	
90 Zr	# 3	72	116947.8	0.0000	5.3900	ppb	1.30	50.00	
95 Mo	# 3	115	6526.2	0.0000	0.9754	ppb	1.65	500.00	
107 Ag	# 3	115	35786.8	0.0000	2.2320	ppb	1.69	50.00	
111 Cd	# 3	115	4204.9	0.0000	1.1250	ppb	2.44	500.00	
118 Sn	# 3	115	53473.5	0.0000	5.0930	ppb	0.60	500.00	
121 Sb	# 3	115	5075.5	0.0000	0.3509	ppb	1.02	500.00	
137 Ba	# 3	115	3878834.0	0.0000	762.6000	ppb	0.24	1000.00	
182 W	# 3	159	1121.2	0.0000	0.1071	ppb	6.60	50.00	
205 Tl	# 3	159	3878.5	0.0000	0.1700	ppb	7.33	500.00	
208 Pb	# 3	159	816292.0	0.0000	27.2800	ppb	1.17	500.00	
235 U	# 3	159	206.7	0.0000	0.0058	ppb	19.48	30.00	
238 U	# 3	159	21540.6	0.0000	0.7037	ppb	0.64	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	480484.09	0.13	843026.13	57.0	60 - 125	ISFail
45 Sc # 1	1955451.40	1.20	2166366.00	90.3	60 - 125	
45 Sc # 2	428896.16	0.43	501841.66	85.5	60 - 125	
45 Sc # 3	3280375.80	0.91	3450345.50	95.1	60 - 125	
72 Ge # 1	468842.13	1.50	592763.38	79.1	60 - 125	
72 Ge # 2	211107.63	0.68	268634.34	78.6	60 - 125	
72 Ge # 3	669779.19	1.03	803485.44	83.4	60 - 125	
115 In # 3	4345695.50	0.47	5602625.50	77.6	60 - 125	
159 Tb # 3	4433167.50	0.66	6271103.00	70.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09067.D\F6E09067.D#
Date Acquired: May 19 2016 07:14 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-16
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	105372.5	0.0000	16.3100	ppb	3.18	50.00	
9 Be	# 3	6	2070.2	0.0000	1.0840	ppb	3.32	50.00	
11 B	# 3	6	14366.1	0.0000	9.8060	ppb	1.41	100.00	
23 Na	# 1	45	3268687.0	0.0000	707.8000	ppb	1.60	50000.00	
24 Mg	# 3	45	36739712.0	0.0000	2914.0000	ppb	1.60	50000.00	
27 Al	# 3	45	291254590.0	0.0000	16940.0000	ppb	0.78	50000.00	
28 Si	# 1	45	6223674.0	0.0000	3974.0000	ppb	1.74	5000.00	
31 P	# 3	45	280698.0	0.0000	264.8000	ppb	1.16	500.00	
39 K	# 2	45	4121679.0	0.0000	3338.0000	ppb	0.57	50000.00	
40 Ca	# 1	45	262679500.0	0.0000	22930.0000	ppb	0.96	50000.00	
47 Ti	# 3	45	666300.9	0.0000	323.0000	ppb	0.75	500.00	
51 V	# 2	45	269223.9	0.0000	35.6800	ppb	0.49	500.00	
52 Cr	# 2	45	161136.1	0.0000	19.0500	ppb	0.77	500.00	
55 Mn	# 3	45	11171500.0	0.0000	326.2000	ppb	1.04	3000.00	
56 Fe	# 1	45	265529200.0	0.0000	16320.0000	ppb	0.49	50000.00	
59 Co	# 3	45	171334.1	0.0000	5.7740	ppb	2.32	500.00	
60 Ni	# 2	45	40842.3	0.0000	14.1400	ppb	0.93	500.00	
63 Cu	# 2	45	202258.7	0.0000	27.4700	ppb	0.27	500.00	
66 Zn	# 3	72	273692.8	0.0000	71.6800	ppb	0.70	500.00	
75 As	# 2	72	7032.4	0.0000	5.6640	ppb	0.56	500.00	
78 Se	# 1	72	193.1	0.0000	0.3347	ppb	10.65	500.00	
88 Sr	# 3	72	2391640.0	0.0000	61.4500	ppb	0.71	500.00	
90 Zr	# 3	72	171346.4	0.0000	7.7790	ppb	1.21	50.00	
95 Mo	# 3	115	5629.1	0.0000	0.8048	ppb	3.80	500.00	
107 Ag	# 3	115	8054.8	0.0000	0.4802	ppb	2.69	50.00	
111 Cd	# 3	115	2571.4	0.0000	0.6576	ppb	2.48	500.00	
118 Sn	# 3	115	40083.6	0.0000	3.6540	ppb	0.52	500.00	
121 Sb	# 3	115	6385.0	0.0000	0.4301	ppb	1.62	500.00	
137 Ba	# 3	115	1044504.0	0.0000	196.7000	ppb	0.51	1000.00	
182 W	# 3	159	805.6	0.0000	0.0725	ppb	6.67	50.00	
205 Tl	# 3	159	3996.3	0.0000	0.1708	ppb	2.54	500.00	
208 Pb	# 3	159	748742.7	0.0000	24.3900	ppb	2.84	500.00	
235 U	# 3	159	138.9	0.0000	0.0037	ppb	23.10	30.00	
238 U	# 3	159	14206.0	0.0000	0.4515	ppb	2.86	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	459457.53	0.36	843026.13	54.5	60 - 125	ISFail
45 Sc # 1	1942389.10	1.28	2166366.00	89.7	60 - 125	
45 Sc # 2	426940.34	0.53	501841.66	85.1	60 - 125	
45 Sc # 3	3292974.50	1.08	3450345.50	95.4	60 - 125	
72 Ge # 1	475354.94	0.18	592763.38	80.2	60 - 125	
72 Ge # 2	214021.25	0.27	268634.34	79.7	60 - 125	
72 Ge # 3	680366.50	0.93	803485.44	84.7	60 - 125	
115 In # 3	4536720.00	0.70	5602625.50	81.0	60 - 125	
159 Tb # 3	4547858.50	1.67	6271103.00	72.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

0 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09068.D\F6E09068.D#
Date Acquired: May 19 2016 07:18 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-17
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	105246.6	0.0000	15.5500	ppb	1.38	50.00	
9 Be	# 3	6	1647.9	0.0000	0.8329	ppb	3.33	50.00	
11 B	# 3	6	13020.4	0.0000	8.5430	ppb	1.69	100.00	
23 Na	# 1	45	1639932.0	0.0000	355.8000	ppb	0.76	50000.00	
24 Mg	# 3	45	45985592.0	0.0000	3763.0000	ppb	1.55	50000.00	
27 Al	# 3	45	231027900.0	0.0000	13860.0000	ppb	1.71	50000.00	
28 Si	# 1	45	6510230.0	0.0000	4264.0000	ppb	0.52	5000.00	
31 P	# 3	45	315398.7	0.0000	309.9000	ppb	1.54	500.00	
39 K	# 2	45	3754892.0	0.0000	3109.0000	ppb	0.68	50000.00	
40 Ca	# 1	45	1792380000.0	0.0000	160600.0000	ppb	0.79	50000.00	>LRS
47 Ti	# 3	45	534541.0	0.0000	267.3000	ppb	0.19	500.00	
51 V	# 2	45	274263.1	0.0000	37.2600	ppb	0.73	500.00	
52 Cr	# 2	45	122598.9	0.0000	14.8100	ppb	0.60	500.00	
55 Mn	# 3	45	17641170.0	0.0000	531.4000	ppb	1.27	3000.00	
56 Fe	# 1	45	223218300.0	0.0000	14070.0000	ppb	0.76	50000.00	
59 Co	# 3	45	151589.3	0.0000	5.2680	ppb	0.66	500.00	
60 Ni	# 2	45	37842.7	0.0000	13.4100	ppb	0.77	500.00	
63 Cu	# 2	45	81100.4	0.0000	11.1700	ppb	0.57	500.00	
66 Zn	# 3	72	187339.1	0.0000	51.9700	ppb	0.24	500.00	
75 As	# 2	72	9261.6	0.0000	7.8350	ppb	0.54	500.00	
78 Se	# 1	72	190.9	0.0000	0.3516	ppb	5.96	500.00	
88 Sr	# 3	72	9699629.0	0.0000	264.6000	ppb	0.80	500.00	
90 Zr	# 3	72	117471.7	0.0000	5.6570	ppb	1.20	50.00	
95 Mo	# 3	115	6834.1	0.0000	1.0430	ppb	1.55	500.00	
107 Ag	# 3	115	1446.8	0.0000	0.0909	ppb	6.87	50.00	
111 Cd	# 3	115	2292.2	0.0000	0.6244	ppb	4.41	500.00	
118 Sn	# 3	115	30979.4	0.0000	3.0070	ppb	2.24	500.00	
121 Sb	# 3	115	4171.9	0.0000	0.2886	ppb	4.38	500.00	
137 Ba	# 3	115	2267859.0	0.0000	455.0000	ppb	1.73	1000.00	
182 W	# 3	159	2108.0	0.0000	0.2181	ppb	2.86	50.00	
205 Tl	# 3	159	2981.6	0.0000	0.1352	ppb	0.88	500.00	
208 Pb	# 3	159	564207.5	0.0000	19.6500	ppb	0.94	500.00	
235 U	# 3	159	175.6	0.0000	0.0051	ppb	22.54	30.00	
238 U	# 3	159	20272.9	0.0000	0.6902	ppb	1.39	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	474802.50	1.28	843026.13	56.3	60 - 125	ISFail
45 Sc # 1	1893668.90	1.03	2166366.00	87.4	60 - 125	
45 Sc # 2	416833.59	0.66	501841.66	83.1	60 - 125	
45 Sc # 3	3192099.00	1.13	3450345.50	92.5	60 - 125	
72 Ge # 1	448053.53	1.07	592763.38	75.6	60 - 125	
72 Ge # 2	204623.84	0.50	268634.34	76.2	60 - 125	
72 Ge # 3	641062.63	0.59	803485.44	79.8	60 - 125	
115 In # 3	4258593.00	0.21	5602625.50	76.0	60 - 125	
159 Tb # 3	4252958.00	1.20	6271103.00	67.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09069.D\F6E09069.D#
Date Acquired: May 19 2016 07:22 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-18
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	139752.8	0.0000	24.5900	ppb	1.09	50.00	
9 Be	# 3	6	2355.8	0.0000	1.2730	ppb	6.82	50.00	
11 B	# 3	6	21237.7	0.0000	15.1700	ppb	0.19	100.00	
23 Na	# 1	45	538087.2	0.0000	102.7000	ppb	1.18	50000.00	
24 Mg	# 3	45	55334780.0	0.0000	4495.0000	ppb	0.91	50000.00	
27 Al	# 3	45	313097790.0	0.0000	18650.0000	ppb	0.42	50000.00	
28 Si	# 1	45	6928574.0	0.0000	4447.0000	ppb	1.51	5000.00	
31 P	# 3	45	860893.4	0.0000	870.6000	ppb	0.76	500.00	>LRS
39 K	# 2	45	5541093.0	0.0000	4590.0000	ppb	1.11	50000.00	
40 Ca	# 1	45	792545410.0	0.0000	69570.0000	ppb	1.67	50000.00	>LRS
47 Ti	# 3	45	610783.9	0.0000	303.3000	ppb	0.51	500.00	
51 V	# 2	45	309411.5	0.0000	41.7800	ppb	0.70	500.00	
52 Cr	# 2	45	173824.5	0.0000	20.9000	ppb	0.39	500.00	
55 Mn	# 3	45	10273260.0	0.0000	307.2000	ppb	0.18	3000.00	
56 Fe	# 1	45	278271900.0	0.0000	17180.0000	ppb	0.73	50000.00	
59 Co	# 3	45	191435.1	0.0000	6.6070	ppb	0.22	500.00	
60 Ni	# 2	45	46645.6	0.0000	16.4100	ppb	1.17	500.00	
63 Cu	# 2	45	199759.4	0.0000	27.5800	ppb	0.31	500.00	
66 Zn	# 3	72	399678.0	0.0000	107.8000	ppb	0.41	500.00	
75 As	# 2	72	8571.2	0.0000	7.1110	ppb	1.13	500.00	
78 Se	# 1	72	378.5	0.0000	0.6790	ppb	1.92	500.00	
88 Sr	# 3	72	6224573.0	0.0000	164.5000	ppb	0.61	500.00	
90 Zr	# 3	72	108696.5	0.0000	5.0720	ppb	0.67	50.00	
95 Mo	# 3	115	5336.7	0.0000	0.7885	ppb	1.74	500.00	
107 Ag	# 3	115	73195.8	0.0000	4.5210	ppb	0.77	50.00	
111 Cd	# 3	115	4009.2	0.0000	1.0620	ppb	2.95	500.00	
118 Sn	# 3	115	120624.0	0.0000	11.3900	ppb	0.93	500.00	
121 Sb	# 3	115	6332.8	0.0000	0.4418	ppb	2.57	500.00	
137 Ba	# 3	115	1801334.0	0.0000	350.7000	ppb	0.60	1000.00	
182 W	# 3	159	1516.8	0.0000	0.1472	ppb	2.00	50.00	
205 Tl	# 3	159	4439.8	0.0000	0.1945	ppb	1.82	500.00	
208 Pb	# 3	159	1277192.0	0.0000	42.5000	ppb	0.55	500.00	
235 U	# 3	159	165.6	0.0000	0.0046	ppb	10.44	30.00	
238 U	# 3	159	19180.3	0.0000	0.6235	ppb	1.05	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	445930.78	1.03	843026.13	52.9	60 - 125	ISFail
45 Sc # 1	1932741.90	1.66	2166366.00	89.2	60 - 125	
45 Sc # 2	420071.47	0.51	501841.66	83.7	60 - 125	
45 Sc # 3	3215244.00	0.59	3450345.50	93.2	60 - 125	
72 Ge # 1	466865.56	0.68	592763.38	78.8	60 - 125	
72 Ge # 2	208432.02	1.31	268634.34	77.6	60 - 125	
72 Ge # 3	661544.38	0.71	803485.44	82.3	60 - 125	
115 In # 3	4388762.50	0.43	5602625.50	78.3	60 - 125	
159 Tb # 3	4452858.50	0.21	6271103.00	71.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures
1 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09070.D\F6E09070.D#
Date Acquired: May 19 2016 07:27 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-19
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	96804.5	0.0000	14.4800	ppb	0.38	50.00	
9 Be	# 3	6	1561.2	0.0000	0.8158	ppb	4.47	50.00	
11 B	# 3	6	10428.4	0.0000	6.9970	ppb	3.44	100.00	
23 Na	# 1	45	11036680.0	0.0000	2638.0000	ppb	0.47	50000.00	
24 Mg	# 3	45	66574100.0	0.0000	5727.0000	ppb	0.46	50000.00	
27 Al	# 3	45	215407600.0	0.0000	13590.0000	ppb	0.40	50000.00	
28 Si	# 1	45	7158108.0	0.0000	4958.0000	ppb	0.56	5000.00	
31 P	# 3	45	207330.7	0.0000	208.5000	ppb	0.62	500.00	
39 K	# 2	45	3014314.0	0.0000	2645.0000	ppb	0.91	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	319865.8	0.0000	168.1000	ppb	0.74	500.00	
51 V	# 2	45	215507.6	0.0000	31.0700	ppb	0.50	500.00	
52 Cr	# 2	45	89468.2	0.0000	11.4800	ppb	0.57	500.00	
55 Mn	# 3	45	3132202.0	0.0000	99.1100	ppb	0.81	3000.00	
56 Fe	# 1	45	150337300.0	0.0000	10020.0000	ppb	0.71	50000.00	
59 Co	# 3	45	164711.8	0.0000	6.0180	ppb	0.84	500.00	
60 Ni	# 2	45	38338.0	0.0000	14.4700	ppb	0.63	500.00	
63 Cu	# 2	45	41016.7	0.0000	5.9320	ppb	0.32	500.00	
66 Zn	# 3	72	81620.3	0.0000	24.6700	ppb	1.49	500.00	
75 As	# 2	72	8834.0	0.0000	8.2650	ppb	2.04	500.00	
78 Se	# 1	72	107.1	0.0000	0.2095	ppb	7.94	500.00	
88 Sr	# 3	72	12196670.0	0.0000	365.4000	ppb	0.92	500.00	
90 Zr	# 3	72	59725.6	0.0000	3.1550	ppb	2.08	50.00	
95 Mo	# 3	115	2386.9	0.0000	0.4022	ppb	1.16	500.00	
107 Ag	# 3	115	370.0	0.0000	0.0250	ppb	4.75	50.00	
111 Cd	# 3	115	1247.4	0.0000	0.3779	ppb	2.96	500.00	
118 Sn	# 3	115	26984.3	0.0000	2.9220	ppb	1.49	500.00	
121 Sb	# 3	115	2773.7	0.0000	0.2049	ppb	3.17	500.00	
137 Ba	# 3	115	1366997.0	0.0000	305.9000	ppb	1.50	1000.00	
182 W	# 3	159	939.0	0.0000	0.1009	ppb	10.97	50.00	
205 Tl	# 3	159	3018.2	0.0000	0.1489	ppb	1.79	500.00	
208 Pb	# 3	159	167688.6	0.0000	6.3160	ppb	0.58	500.00	
235 U	# 3	159	102.2	0.0000	0.0032	ppb	29.73	30.00	
238 U	# 3	159	12031.5	0.0000	0.4431	ppb	0.83	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	459260.63	0.19	843026.13	54.5	60 - 125	ISFail
45 Sc # 1	1790610.80	0.55	2166366.00	82.7	60 - 125	
45 Sc # 2	391528.91	0.28	501841.66	78.0	60 - 125	
45 Sc # 3	3036666.80	0.26	3450345.50	88.0	60 - 125	
72 Ge # 1	413385.19	0.12	592763.38	69.7	60 - 125	
72 Ge # 2	185114.30	0.77	268634.34	68.9	60 - 125	
72 Ge # 3	583791.00	0.73	803485.44	72.7	60 - 125	
115 In # 3	3817692.00	1.04	5602625.50	68.1	60 - 125	
159 Tb # 3	3923114.50	0.54	6271103.00	62.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09071.D\F6E09071.D#
Date Acquired: May 19 2016 07:31 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: E082-20
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	146546.7	0.0000	24.4400	ppb	2.10	50.00	
9 Be	# 3	6	2104.7	0.0000	1.0770	ppb	4.31	50.00	
11 B	# 3	6	19587.6	0.0000	13.2200	ppb	1.61	100.00	
23 Na	# 1	45	2594161.0	0.0000	587.0000	ppb	1.49	50000.00	
24 Mg	# 3	45	87582632.0	0.0000	7194.0000	ppb	0.38	50000.00	
27 Al	# 3	45	287704990.0	0.0000	17330.0000	ppb	0.53	50000.00	
28 Si	# 1	45	6962613.0	0.0000	4670.0000	ppb	2.55	5000.00	
31 P	# 3	45	169485.1	0.0000	158.8000	ppb	0.35	500.00	
39 K	# 2	45	4857752.0	0.0000	4178.0000	ppb	0.31	50000.00	
40 Ca	# 1	45	1849606000.0	0.0000	169700.0000	ppb	1.94	50000.00	>LRS
47 Ti	# 3	45	530663.2	0.0000	266.4000	ppb	0.49	500.00	
51 V	# 2	45	262388.1	0.0000	36.7800	ppb	0.22	500.00	
52 Cr	# 2	45	122640.5	0.0000	15.3000	ppb	0.50	500.00	
55 Mn	# 3	45	6446645.0	0.0000	194.9000	ppb	1.28	3000.00	
56 Fe	# 1	45	211280800.0	0.0000	13630.0000	ppb	0.46	50000.00	
59 Co	# 3	45	177402.4	0.0000	6.1900	ppb	0.16	500.00	
60 Ni	# 2	45	43608.8	0.0000	15.9500	ppb	0.40	500.00	
63 Cu	# 2	45	45753.9	0.0000	6.4280	ppb	0.53	500.00	
66 Zn	# 3	72	123764.2	0.0000	34.9600	ppb	0.46	500.00	
75 As	# 2	72	5668.9	0.0000	5.0310	ppb	0.13	500.00	
78 Se	# 1	72	106.2	0.0000	0.1970	ppb	5.55	500.00	
88 Sr	# 3	72	9884149.0	0.0000	275.5000	ppb	0.66	500.00	
90 Zr	# 3	72	221571.4	0.0000	10.9100	ppb	1.18	50.00	
95 Mo	# 3	115	3306.1	0.0000	0.5155	ppb	1.20	500.00	
107 Ag	# 3	115	712.3	0.0000	0.0454	ppb	12.34	50.00	
111 Cd	# 3	115	1992.9	0.0000	0.5585	ppb	8.90	500.00	
118 Sn	# 3	115	30322.1	0.0000	3.0280	ppb	3.04	500.00	
121 Sb	# 3	115	2603.7	0.0000	0.1726	ppb	2.58	500.00	
137 Ba	# 3	115	3034869.0	0.0000	626.4000	ppb	1.63	1000.00	
182 W	# 3	159	841.2	0.0000	0.0846	ppb	4.93	50.00	
205 Tl	# 3	159	3615.1	0.0000	0.1701	ppb	1.83	500.00	
208 Pb	# 3	159	228721.6	0.0000	8.1930	ppb	1.52	500.00	
235 U	# 3	159	131.1	0.0000	0.0039	ppb	8.11	30.00	
238 U	# 3	159	15174.9	0.0000	0.5316	ppb	2.97	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	469870.03	1.18	843026.13	55.7	60 - 125	ISFail
45 Sc # 1	1849468.80	0.88	2166366.00	85.4	60 - 125	
45 Sc # 2	403943.03	0.65	501841.66	80.5	60 - 125	
45 Sc # 3	3179991.50	0.30	3450345.50	92.2	60 - 125	
72 Ge # 1	434405.13	1.15	592763.38	73.3	60 - 125	
72 Ge # 2	193861.95	0.81	268634.34	72.2	60 - 125	
72 Ge # 3	627441.69	0.48	803485.44	78.1	60 - 125	
115 In # 3	4139979.50	1.20	5602625.50	73.9	60 - 125	
159 Tb # 3	4129147.00	1.98	6271103.00	65.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCV QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09076.D\F6E09076.D#
Date Acquired: May 19 2016 07:53 pm
Operator: MMendo
Sample Name: CCV6
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal Update: May 19 2016 02:55 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	28.43 ppb	1.51	25.00	90 - 110	Fail
9 Be	27.59 ppb	0.76	25.00	90 - 110	Fail
11 B	54.04 ppb	1.08	50.00	90 - 110	
23 Na	25270.00 ppb	0.32	25000.00	90 - 110	
24 Mg	24240.00 ppb	0.61	25000.00	90 - 110	
27 Al	25000.00 ppb	0.38	25000.00	90 - 110	
28 Si	2714.00 ppb	0.74	2500.00	90 - 110	
31 P	256.60 ppb	0.40	250.00	90 - 110	
39 K	27220.00 ppb	0.37	25000.00	90 - 110	
40 Ca	25810.00 ppb	0.14	25000.00	90 - 110	
47 Ti	241.70 ppb	0.71	250.00	90 - 110	
51 V	257.40 ppb	0.40	250.00	90 - 110	
52 Cr	248.40 ppb	0.40	250.00	90 - 110	
55 Mn	1458.00 ppb	0.52	1500.00	90 - 110	
56 Fe	23840.00 ppb	0.42	25000.00	90 - 110	
59 Co	226.00 ppb	0.67	250.00	90 - 110	
60 Ni	238.70 ppb	0.57	250.00	90 - 110	
63 Cu	240.50 ppb	0.20	250.00	90 - 110	
66 Zn	239.00 ppb	0.56	250.00	90 - 110	
75 As	260.00 ppb	0.28	250.00	90 - 110	
78 Se	245.40 ppb	0.46	250.00	90 - 110	
88 Sr	258.90 ppb	0.23	250.00	90 - 110	
90 Zr	27.06 ppb	0.14	25.00	90 - 110	
95 Mo	277.80 ppb	0.85	250.00	90 - 110	Fail
107 Ag	26.22 ppb	2.22	25.00	90 - 110	
111 Cd	241.10 ppb	0.89	250.00	90 - 110	
118 Sn	254.00 ppb	1.50	250.00	90 - 110	
121 Sb	251.90 ppb	1.94	250.00	90 - 110	
137 Ba	499.10 ppb	1.28	500.00	90 - 110	
182 W	21.75 ppb	0.56	25.00	90 - 110	Fail
205 Tl	230.00 ppb	0.69	250.00	90 - 110	
208 Pb	215.50 ppb	0.20	250.00	90 - 110	Fail
235 U	1.22 ppb	0.36	1.80	90 - 110	Fail
238 U	196.40 ppb	0.94	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	508906.75	0.38	843026.13	60.4	60 - 125	
45 Sc	1685172.80	0.66	2166366.00	77.8	60 - 125	
45 Sc	376448.81	0.35	501841.66	75.0	60 - 125	
45 Sc	3039777.00	0.35	3450345.50	88.1	60 - 125	
72 Ge	411021.50	0.84	592763.38	69.3	60 - 125	
72 Ge	186517.69	0.49	268634.34	69.4	60 - 125	
72 Ge	626731.38	0.40	803485.44	78.0	60 - 125	
115 In	3977768.30	1.19	5602625.50	71.0	60 - 125	
159 Tb	3919735.00	0.39	6271103.00	62.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

7 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62016\E\IF6E09.B\F6E09077.D\F6E09077.D#
Date Acquired: May 19 2016 07:57 pm
Acq. Method: EMX6020H.M
Operator: MMendo
Sample Name: CCB6
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62016\D\IF6D11.B\EMX6020H.C
Last Cal. Update: May 19 2016 02:55 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.6379	ppb	35514.1	10.08	0.20	Fail
9 Be	-0.0023	ppb	14.4	38.49	0.10	
11 B	0.2959	ppb	1151.2	9.05	5.00	
23 Na	-6.6450	ppb	42630.6	4.60	40.00	
24 Mg	1.0230	ppb	22744.3	10.84	10.00	
27 Al	0.5686	ppb	21003.1	29.18	20.00	
28 Si	1.6840	ppb	4887.7	1.14	20.00	
31 P	2.5200	ppb	18627.9	5.90	10.00	
39 K	53.8700	ppb	146525.7	1.51	20.00	Fail
40 Ca	4.5070	ppb	139210.0	5.32	25.00	
47 Ti	0.0191	ppb	151.1	70.67	0.50	
51 V	0.2429	ppb	5577.3	1.78	0.50	
52 Cr	-0.0079	ppb	950.5	47.17	0.20	
55 Mn	0.0354	ppb	3555.0	37.66	0.20	
56 Fe	3.2940	ppb	57019.8	4.51	10.00	
59 Co	0.0067	ppb	425.6	26.51	0.20	
60 Ni	0.0129	ppb	69.6	12.41	0.20	
63 Cu	0.0176	ppb	1320.1	13.31	0.40	
66 Zn	0.7299	ppb	3935.1	3.25	2.00	
75 As	0.0572	ppb	161.8	19.37	0.20	
78 Se	0.0570	ppb	35.1	40.76	0.20	
88 Sr	0.0045	ppb	1225.7	82.58	0.20	
90 Zr	0.0049	ppb	281.1	10.57	2.00	
95 Mo	0.0606	ppb	450.0	12.13	0.40	
107 Ag	0.0006	ppb	30.0	61.91	0.20	
111 Cd	0.0015	ppb	16.2	436.64	0.20	
118 Sn	0.0414	ppb	541.1	12.05	0.20	
121 Sb	0.1296	ppb	2182.5	8.59	0.40	
137 Ba	0.0214	ppb	203.3	50.77	0.20	
182 W	0.0074	ppb	148.9	53.16	1.00	
205 Tl	0.0064	ppb	246.7	20.14	0.20	
208 Pb	0.0009	ppb	618.9	155.18	0.10	
235 U	0.0002	ppb	13.3	57.26	1.00	
238 U	0.0099	ppb	368.9	30.55	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	504632.3	0.56	843026.13	59.9	60 - 125	ISFail
45 Sc	1727220.8	0.95	2166366.00	79.7	60 - 125	
45 Sc	382266.6	0.21	501841.66	76.2	60 - 125	
45 Sc	2998158.5	0.37	3450345.50	86.9	60 - 125	
72 Ge	440172.6	1.44	592763.38	74.3	60 - 125	
72 Ge	195658.2	0.67	268634.34	72.8	60 - 125	
72 Ge	639591.6	0.53	803485.44	79.6	60 - 125	
115 In	4371628.5	0.84	5602625.50	78.0	60 - 125	
159 Tb	4254170.5	0.09	6271103.00	67.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\E\IF6E09.B\F6E09004.D\F6E09004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
1 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 02515001

Book #: EIM-058
Batch: IME0245
Matrix: soil
Digestor ID: D

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	92.2 °C		°C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 03 - 05	4
LCS-2	SM6A - 007 - 03 - 06	4
MS	Same spike soln & vol as LCS 1&2	
Blank Soil (Bead)	SM5A - 03 - 02 - 09	2g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 005 - 16 - 15	10
HCl	SWIA - 005 - 15 - 24	5+5
H_2O_2	SWIA - 005 - 14 - 23	10
HNO_3(1:1)	SM5B - 03 - 69 - 04	10
pH Strip (0-14)	NA	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 07
☑ Thermometer ID:	150590425/022
☑ Pipette ID:	142780357
☐ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP
Standard Added By: SP
Witnessed By: [illegible]
Extract Rcvd By: [illegible]
Checked By: [illegible]

EMAX LABORATORIES INC

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IME024S01	IME024SB	2.07	g	5/16/16 15:30	100	2	100	1	
16IME024S02	IME024SL	2.03	g	5/16/16 15:31	100	2	100	1	
16IME024S03	E082-01	2.05	g	5/16/16 15:32	100	2	100	0.976	
16IME024S04	E082-02	2.07	g	5/16/16 15:33	100	2	100	0.966	
16IME024S05	E082-03	2.07	g	5/16/16 15:33	100	2	100	0.966	
16IME024S06	E082-04	2.08	g	5/16/16 15:34	100	2	100	0.962	
16IME024S07	E082-05	2.06	g	5/16/16 15:34	100	2	100	0.971	
16IME024S08	E082-06	2.04	g	5/16/16 15:35	100	2	100	0.98	
16IME024S09	E082-07	2.07	g	5/16/16 15:36	100	2	100	0.966	
16IME024S10	E082-08	2.04	g	5/16/16 15:36	100	2	100	0.98	
16IME024S11	E082-09	2.06	g	5/16/16 15:37	100	2	100	0.971	
16IME024S12	E082-10	2.07	g	5/16/16 15:38	100	2	100	0.966	
16IME024S13	E082-11	2.06	g	5/16/16 15:39	100	2	100	0.971	
16IME024S14	E082-12	2.07	g	5/16/16 15:39	100	2	100	0.966	
16IME024S15	E082-12M	2.08	g	5/16/16 15:40	100	2	100	0.962	
16IME024S16	E082-12D	2.09	g	5/16/16 15:41	100	2	100	0.957	
16IME024S17	E082-13	2.08	g	5/16/16 15:42	100	2	100	0.962	
16IME024S18	E082-14	2.04	g	5/16/16 15:42	100	2	100	0.98	
16IME024S19	E082-15	2.02	g	5/16/16 15:44	100	2	100	0.99	
16IME024S20	E082-16	2.04	g	5/16/16 15:45	100	2	100	0.98	
16IME024S21	E082-17	2.05	g	5/16/16 15:46	100	2	100	0.976	
16IME024S22	E082-18	2.08	g	5/16/16 15:47	100	2	100	0.962	
16IME024S23	E082-19	2.08	g	5/16/16 15:47	100	2	100	0.962	
16IME024S24	E082-20	2.04	g	5/16/16 15:48	100	2	100	0.98	

SP 5/16/16

Balance ID: 10203192. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/16/16 15:49

Prepared By: SPara

☑ Digestion Ended @ 5/16/16 17:43

Checked By: [illegible]

Comments:

Date 5/16/16

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E082 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/27/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
CA017-SB01-001	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB01-201	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB01-005	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB01-010	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB02-000.5	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB02-005	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB02-010	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB03-001	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB03-201	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB03-004.5	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB03-010	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB04-002	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB04-005	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB04-010	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB05-001	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB05-005	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB05-010	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB06-000.5	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB06-005	5/8/2016	5/10/2016	Soil	Arsenic (6020A)
CA017-SB06-010	5/8/2016	5/10/2016	Soil	Arsenic (6020A)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD-QSM deviations noted in the laboratory case narrative?		X	
Were DoD-QSM corrective actions followed if deviations were noted?			X
Were any issues noted in the cooler receipt form?	X		

The laboratory case narrative no problems or discrepancies were encountered.

The cooler receipt form indicated the sample time on the COC for sample CA017-SB03-201 did not match the sample time on the label. Corrections were made to the COC; however, the corrections were not initialed and dated. These issues are discussed further in Section 2.0.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?		X
Were all sample identifications (IDs) documented correctly on sample labels?	X	
Did samples listed on COCs match the sample labels?		X
Were samples relinquished properly on the COC?	X	

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E082 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/27/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

The cooler receipt form indicated the sample time on the COC for sample CA017-SB03-201 did not match the sample time on the label. The sample time on the COC was 9:35; the sample time on the label was 9:25. Per the URS chemist, the correct sample time was 9:35. Corrections were made to the COC; however, the corrections were not initialed and dated. No qualification of data was required.

3.0 Holding Time

Verification Criteria	Yes	No	N/A
Were all samples extracted/analyzed within holding time?	X		
Were samples outside holding time extracted/analyzed < 2x holding time?			X
Were samples outside holding time extracted/analyzed > 2x holding time?			X

4.0 Instrument Performance Check (Tuning)

Method 6020A Instrument Tuning Criteria (Filename)	F6E09001.D	
Instrument:	**F6**	
Date of Tuning:	**5/19/2016**	
	Yes	**No**
Was instrument tuning completed prior to calibration?	X	
Was mass calibration ≤ 0.1 amu from true value?	X	
Was resolution < 0.9 amu full width at 10% peak height?	X	
For stability, was the RSD ≤ 5% for at least four replicate analytes?	X	

5.0 Initial Calibration

Method 6020A Initial Calibration Criteria			
Instrument:	**F6**		
Date of Calibration:	**5/19/2016**		
	Yes	**No**	**N/A**
Was a minimum of two standards and a calibration blank used for ICAL?	X		
Was r ≥ 0.995?	X		

6.0 Initial Calibration Verification [(ICV) Second Source]

Method 6020A ICV Criteria (Filename)	F6E09009.D		
Instrument:	**F6**		
Date of Initial Calibration Verification	**5/19/2016**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV %recovery (%R) for all analytes within 90-110%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E082 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/27/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

7.0 Continuing Calibration Verification (CCV)

Method 6020A CCV Criteria (Date)	All CCVs on 5/19/2016		
Instrument:	F6		
	Yes	No	N/A
Was the CCV analyzed after every 10 samples and at the end of the analysis sequence?	X		
Were the CCV %Rs for all analytes within 90-110%?	X		

8.0 Blank Samples

Blank Criteria	Yes	No	N/A
Was a method blank analyzed with every preparatory batch?	X		
Were analytes detected > ½ the LOQ and > 1/10 the amount measured in any sample or 1/10 the regulatory limit?		X	
Were target analytes detected in method, trip or calibration blanks?		X	

9.0 Laboratory Control Sample (LCS)

LCS Criteria	Yes	No	N/A
Was an LCS analyzed with every preparatory batch?	X		
Were LCS recoveries within acceptance criteria listed in the UFP-QAPP?	X		

10.0 Internal Standards (IS)

Methods 6020A Internal Standard Criteria	Yes	No	N/A
Were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standards spiked for all samples and standards?	X		
For Method 6020A, were internal standard areas within 30% to 120% of the ICAL midpoint standard area?	X		

11.0 Interference Check Sample (6020A Metals only)

Interference Check Sample Criteria	Yes	No	N/A
Were ICS-A and ICSAB samples analyzed at the beginning of the analytical run and every 12 hours?	X		
Was the ICS-A absolute value concentration for all non-spiked metals < LOD (unless they are a verified trace impurity form one of the spiked metals)	X		
Were the ICS-AB recoveries within ± 20%?	X		

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E082 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/27/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

12.0 Matrix Spike/Matrix Spike Duplicate

MS/MSD Criteria	Yes	No	N/A
Was a MS/MSD sample analyzed with every preparatory batch?	X		
Was a MS/MSD sample collected for this SDG?	X		
Were MS/MSD recoveries/RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CA017-SB04-002 was spiked and analyzed for arsenic.

13.0 Matrix Duplicate

Matrix Duplicate (MD) Criteria	Yes	No	N/A
Were MD samples analyzed with every preparatory batch?	X		
Were MD samples collected for this SDG?	X		
Were MD RPDs within acceptance criteria listed in the UFP-QAPP?	X		

Sample CA017-SB04-002 was duplicated and analyzed for arsenic.

14.0 Dilution Test

Method 6020A Dilution Test Criteria	Yes	No	N/A
Was a dilution test sample analyzed with every preparatory batch?	X		
Was a dilution test sample analyzed from this SDG?	X		
Were metals concentrations > 50x the LOQ?		X	
Did the five-fold dilution agree within ± 10% of the original measurement?	X		
If the five-fold dilution did not agree within ± 10% of the original measurement, was a post digestion spike sample analyzed?	X		

Sample CA017-SB04-002 was diluted and analyzed for arsenic.

15.0 Post Digestion Spike (PDS)

Method 6020A PDS Criteria	Yes	No	N/A
Was a PDS sample analyzed from this SDG?	X		
Was a PDS sample analyzed if the dilution test failed or metals concentrations were < 50 x the LOD?	X		
Were the PDS recoveries within 75-125%?	X		

Sample CA017-SB04-002 was spiked and analyzed for arsenic.

Cannon AFB Data Verification

Laboratory and SDGs#: EMAX 16E082 **URS Chemist: Jennifer Zorinsky**
Date Verified: 5/27/2016 **URS ITR:**
Guidance: DoD QSM, Version 4.2, Appendix F Tables (DoD, 2010)
Applicable QAPP: Work Plan RCRA Facility Investigation at Twelve Sites (FPM/URS 2015)
Applicable Analytical Methods: 6020A

16.0 Field Duplicate Samples

Field Duplicate Criteria	Yes	No	N/A
Were field duplicate samples collected for this SDG? (if yes, list below)	X		
Were parent sample / field duplicate RPDs ≤ 50% for soil analytes that had concentrations > 5x the LOQ.	X		
Were the differences between the parent sample / field duplicate < 2x the LOQ for analytes that had concentrations < 5x the LOQ			X

Parent Sample ID	Field Duplicate Sample ID
CA017-SB01-001	CA017-SB01-201
CA017-SB03-001	CA017-SB03-201

17.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

18.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Were common laboratory contaminant concentrations < 2x the LOQ?			X
Was professional judgment used to qualify data (if yes, list below)?		X	

D.1 – IDW Analytical Data

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16B094**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16B094**

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-01-2016
EMAX Batch No.: 16B094

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Laboratory Report
Project: Cannon AFB PBR

Enclosed is the Laboratory report for samples received on 02/11/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
TB-021016	B094-01	02/10/16	WATER	VOLATILE ORGANICS BY GC/MS
CAFB-IDW-S-022016	B094-02	02/10/16	SOIL	METALS ICP TCLP
				MERCURY TCLP
				SEMIVOLATILE ORGANICS TCLP
				VOLATILE ORGANICS TCLP
				PAINT FILTER LIQUID TEST
				CHLORINATED HERBICIDES TCLP
				PESTICIDES TCLP
CAFB-IDW-W-022016	B094-03	02/10/16	WATER	VOLATILE ORGANICS BY GC/MS
				SEMIVOLATILE ORGANICS BY GCMS
				PESTICIDES ORGANOCHLORINE
				CHLORINATED HERBICIDES
				TOTAL METALS BY ICP-MS
				MERCURY

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of two (2) water samples were received on 02/11/16 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260B 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 were two (2) CCVs associated with this SDG: CCV(Datafile ID:RBR215) and CCV(Datafile ID:RBW454). 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, two (2) method blanks were analyzed. VO06B17B and VOF3B10B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two (2) sets of LCS/LCD were analyzed. All Analytes in VO06B17L/VO06B17C and VOF3B10X/VOF3B10Y were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.
Sample B094-03 (CAFB-IDW-W-022016) was initially analyzed and reported at dilution to reduce matrix interference (Foamer matrix).

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

One (1) soil sample was received on 02/11/16 to be analyzed for TCLP Volatile Organics by GC/MS in accordance with Method SW1311/5030B/8260B and project specific requirements.

Holding Time
The sample was 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:RBB156) 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, two (2) method blanks were analyzed. TVB003SB and VS03B07B were compliant to project requirement. Refer to sample result summary forms 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. All Analytes in VS03B07L/VS03B07C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW3520C/8270D
SEMI VOLATILE ORGANICS BY GC/MS

One (1) water sample was received on 02/11/16 to be analyzed for Semi Volatile Organics by GC/MS in accordance with Method SW3520C/8270D and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios as well as DDT breakdown were evaluated. Results were within acceptance criteria. Tailing factor for Benzidine and Pentachlorophenol were also verified and results were within the method limits. 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:RBJ208) 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. SVB018WB - 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. All Analytes in SVB018WL/SVB018WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.
Sample B094-03 (CAFB-IDW-W-022016) was initially analyzed at dilution due to milky yellow color appearance of the extracts.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

One (1) soil sample was received on 02/11/16 to be analyzed for TCLP Semi Volatile Organics by GC/MS in accordance with Method SW1311/3520C/8270D and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios as well as DDT breakdown were evaluated. Results were within acceptance criteria. Tailing factor for Benzidine and Pentachlorophenol were also verified and results were within the method limits. 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:RBJ208) 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, two (2) method blanks were analyzed. SVB018WB and TXB005SB were compliant to project requirement. Refer to sample result summary forms 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. All Analytes in SVB018WL/SVB018WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW3520C/8081B
PESTICIDES

One (1) water sample was received on 02/11/16 to be analyzed for Pesticides in accordance with Method SW3520C/8081B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument performance was checked prior to calibration. DDT and Endrin breakdown were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. CPB025WB - 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. All Analytes in CPB025WL/CPB025WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Relative percentage difference (RPD) between the two results was evaluated. If RPD is less than 40% and peaks are well defined the higher result is reported. Where RPD is greater than 40% the chromatogram was checked for anomalies and results were selected based on processed knowledge. If there is no evidence of any chromatographic ambiguity, the higher result is reported.
Note that analyte CASNO 5103-74-2 (registered as trans-chlordane) was reported as gamma-chlordane as identified in Method 8081A/DOD QSM 5.0.
Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW1311/SW3520C/8081B
TCLP PESTICIDES

One (1) soil sample was received on 02/11/16 to be analyzed for Tclp Pesticides in accordance with Method SW1311/SW3520C/8081B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument performance was checked prior to calibration. DDT and Endrin breakdown were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. CPB025WB and TXB005SB were compliant to project requirement. Refer to sample result summary forms 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. All Analytes in CPB025WL/CPB025WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Relative percentage difference (RPD) between the two results was evaluated. If RPD is less than 40% and peaks are well defined the higher result is reported. Where RPD is greater than 40% the chromatogram was checked for anomalies and results were selected based on processed knowledge. If there is no evidence of any chromatographic ambiguity, the higher result is reported.
Note that analyte CASNO 5103-74-2 (registered as trans-chlordane) was reported as gamma-chlordane as identified in Method 8081A/DOD QSM 5.0.
Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD 8151A
HERBICIDES

One (1) water sample was received on 02/11/16 to be analyzed for Herbicides in accordance with Method 8151A and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. HEB007WB - 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. All Analytes in HEB007WL/HEB007WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.
Sample B094-03 (CAFB-IDW-W-022016) was analyzed with 10x dilution due to sample matrix problem.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW1311/8151A
TCLP HERBICIDES

One (1) soil sample was received on 02/11/16 to be analyzed for Tclp Herbicides in accordance with Method SW1311/8151A and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. HEB007WB and TXB005SB were compliant to project requirement. Refer to sample result summary forms 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. All Analytes in HEB007WL/HEB007WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW6020A
TOTAL METALS BY ICP-MS

One (1) water sample was received on 02/11/16 to be analyzed for Total Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
The sample was digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IMB025WB - 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) LCS was analyzed. All Analytes in IMB025WL - all analytes were within LCS QC limits. 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) MS was analyzed. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

One (1) soil sample was received on 02/11/16 to be analyzed for TCLP Metals by ICP in accordance with Method SW1311/3010A/6010C and project specific requirements.

Holding Time
The sample was digested and analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. IPB034WB - result was compliant to project requirement. Barium(0.00585J <1/2 LOQ) was detected at trace level in TXB005SB. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) LCS was analyzed. All Analytes in IPB034WL - all analytes were within LCS QC limits. 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) MS was analyzed. In addition, analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW7470A
MERCURY BY COLD VAPOR

One (1) water sample was received on 02/11/16 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
The sample was digested and 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.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Mercury was not detected in HGB009WB. 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) LCS was analyzed. Mercury was within LCS QC limits in HGB009WL. 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) MS was analyzed. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW1311/7470A
TCLP MERCURY

One (1) soil sample was received on 02/11/16 to be analyzed for Tclp Mercury in accordance with Method SW1311/7470A and project specific requirements.

Holding Time
The sample was digested and 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.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. HGB009WB and TXB005SB were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) LCS was analyzed. Mercury was within LCS QC limits in HGB009WL. 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) MS was analyzed. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Reference Number: SM02.7.3

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 168094
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7823 5084 5190	Recipient Miguel
☐ EMAX Courier ☐ Client Delivery		Date 2-11-16 Time 9:15

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 ☑ Plastic Bag
Temperatures (Cool, ≤6 °C but not frozen) ☑ Cooler 1 3.3 °C ☐ Cooler 2 ____ °C ☐ Cooler 3 ____ °C ☐ Cooler 4 ____ °C ☐ Cooler 5 ____ °C
☐ Cooler 6 ____ °C ☐ Cooler 7 ____ °C ☐ Cooler 8 ____ °C ☐ Cooler 9 ____ °C ☐ Cooler 10 ____ °C
Thermometer: A - S/N ____ B - S/N 140252070 C - S/N 140252067 D - S/N 150555630
FM 1/20/15

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
* 4-5	21, 28	D1		R1 R2
↓	↓	D4		R1
↓	↓	D6		R1 R2
4-5	15-17, 20, 22-24, 27	D10		

2/11/16

☐ 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: * ① One label provided for two jars; Marked according to packaging ② Sample 01, 03 label for vials placed on baggie ③ Sample 02 container 03 arrived w/ a cracked lid. ③ Sample 02 no 9095 analysis indicated in label All labels for sample #3 read the same: TCLP water 8260, 8270, 8081, 8151, 6020, 7470 / Pres. w/HCl, 1L Amp, 250 w/HNO3

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in label	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in label	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 2/11/16 / 2/11/16

SRF ____ Date 2/11/16

PM ____ Date 2/11/16

ORIGIN ID:CVNA (402) 334-8181
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 10
ACTWGT: 56
CAD: 00
DIMS:

3 10:30 A 5190 02.1

RT 477
ST 17

TO SAMPLE CUSTODIAN
EMAX LABORATORIES
1835 W. 205TH ST

TORRANCE CA 90501

16B094

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J1610160104011uv

THU - 11 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7823 5084 5190

A7 HHRA

90501
CA-US LAX

URS
129983 129984

Andy Mai

From: Zorinsky, Jennifer [jennifer.zorinsky@aecom.com]
Sent: Wednesday, February 10, 2016 2:46 PM
To: Andy Mai
Subject: Cannon COC
Follow Up Flag: Follow up
Flag Status: Red
Attachments: 10Feb2016.pdf

Hi Andy,

Here is the COC from today's sampling. This is the end of the sampling event. Please make the following changes at login:

1. TB-021016 – please login in for total VOCs only. Please report only the TCLP compounds.
2. CAFB-IDW-S-022016 (soil) – please login in for TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals and paint filter.
3. CAFB-IDW-S-022016 (water) – please change the sample ID to CAFB-IDW-**W**-022016. Please login in for total VOCS, total SVOCs, total pesticides, total herbicides, total metals. Please report only the TCLP compounds for each analysis. There is some alconox in this sample; please let me know if you have an issue with surrogate recoveries.
4. Please login in samples CA022-SD06-000.5 and CA022-SD05-000.5 for SIM-PAH as well as SVOCs. Please use the list we discussed this afternoon.
5. All samples were collected on 2/10/2016.

Thanks
Jennifer

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Built to deliver a better world

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16B094

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

Project Name: Cannon AFB
Project No.: 60425210.23446540.0014AA
Project Location: Cloris, NM
Project Manager: Mike Sonderman
Sampler(s): Kyle Kloewer / Jessica Hoppmann

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	TCLP Soil	TCLP Water	Preservative / Remarks
1	2/10/16	1049		X	TB-021016	water	2	40 mL VOA		X	4°C
2		1051		X	CAFB-IDW-S-022016	Soil	2	8 oz jar	X		4°C
3		1058		X	CAFB-IDW-~~S~~ W-022016	water	3	40 mL VOA		X	HCl, 4°C
		↓		X	↓ 2/11/16	water	5	1 L amber		X	4°C
		↓		X	↓	water	2	250 mL HDPE		X	HNO_3, 4°C

Jessica Hoppmann 2/10/16

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: Jessica Hoppmann	2/10/16	1300	Method of Shipment: Fedex	☆ Note: Water Solution contains some liquinox
Received by:			Airbill No.:	TCLP Soil: 8260B, 8270D, 8081B, 8151A, 6010C, 7470A, 9095B
Relinquished by:			Lab Address: EMAX Laboratories 1835 W. 205th St. Torrance, CA 90501	TCLP Water: 8260B, 8270D, 8081B, 8151A, 6020A, 7470A
Received for Laboratory by:	2/11/16	9:15		

Temp = 3.3°C 129983

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 or estimated value.
*	*	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.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : F3

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VOF3B10B	1	NA	02/17/1615:00	02/17/1615:00	RBR219	RAR090	VOF3B10	Method Blank
LCS1W	VOF3B10X	1	NA	02/17/1615:28	02/17/1615:28	RBR220	RAR090	VOF3B10	Lab Control Sample (LCS)
LCD1W	VOF3B10Y	1	NA	02/17/1615:56	02/17/1615:56	RBR221	RAR090	VOF3B10	LCS Duplicate
TB-021016	B094-01N	1	NA	02/17/1620:10	02/17/1620:10	RBR230	RAR090	VOF3B10	Field Sample
MBLK2W!	VO06B17B	1	NA	02/24/1612:54	02/24/1612:54	RBW458	RBW406	VO06B17	Method Blank
LCS2W!	VO06B17L	1	NA	02/24/1611:38	02/24/1611:38	RBW455	RBW406	VO06B17	Lab Control Sample (LCS)
LCD2W!	VO06B17C	1	NA	02/24/1612:04	02/24/1612:04	RBW456	RBW406	VO06B17	LCS Duplicate
CAFB-IDW-W-022016!	B094-03N	10	NA	02/24/1616:54	02/24/1616:54	RBW467	RBW406	VO06B17	Field Sample

! Instrument ID : T-006
FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
TCLP VOLATILE ORGANICS BY GC/MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : T-003

LEACHATE

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VS03B07B	1	NA	02/22/1616:55	02/22/1616:55	RBB159	RIB382	VS03B07	Method Blank
LCS1W	VS03B07L	1	NA	02/22/1615:59	02/22/1615:59	RBB157	RIB382	VS03B07	Lab Control Sample (LCS)
LCD1W	VS03B07C	1	NA	02/22/1616:27	02/22/1616:27	RBB158	RIB382	VS03B07	LCS Duplicate
MBLK2W	TVB003SB	10	NA	02/22/1617:23	02/22/1617:23	RBB160	RIB382	VS03B07	Method Blank
CAFB-IDW-S-022016	B094-02	10	NA	02/22/1617:51	02/22/1617:51	RBB161	RIB382	VS03B07	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE

SEMI VOLATILE ORGANICS BY GC/MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : T-OE4

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVB018WB	1	NA	02/22/1610:39	02/17/1614:30	RBJ210	RBJ007	SVB018W	Method Blank
LCS1W	SVB018WL	1	NA	02/22/1610:59	02/17/1614:30	RBJ211	RBJ007	SVB018W	Lab Control Sample (LCS)
LCD1W	SVB018WC	1	NA	02/22/1611:18	02/17/1614:30	RBJ212	RBJ007	SVB018W	LCS Duplicate
CAFB-IDW-W-022016	B094-03	5.9	NA	02/22/1613:54	02/17/1614:30	RBJ220	RBJ007	SVB018W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE

TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : T-OE4

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVB018WB	1	NA	02/22/1610:39	02/17/1614:30	RBJ210	RBJ007	SVB018W	Method Blank
LCS1W	SVB018WL	1	NA	02/22/1610:59	02/17/1614:30	RBJ211	RBJ007	SVB018W	Lab Control Sample (LCS)
LCD1W	SVB018WC	1	NA	02/22/1611:18	02/17/1614:30	RBJ212	RBJ007	SVB018W	LCS Duplicate
MBLK2W	TXB005SB	10	NA	02/22/1611:38	02/17/1614:30	RBJ213	RBJ007	SVB018W	Method Blank
CAFB-IDW-S-022016	B094-02	10	NA	02/22/1612:16	02/17/1614:30	RBJ215	RBJ007	SVB018W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PESTICIDES

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : F9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	CPB025WB	1	NA	02/19/1622:02	02/17/1612:45	RB19030A	RB19028A	CPB025W	Method Blank
LCS1W	CPB025WL	1	NA	02/19/1622:23	02/17/1612:45	RB19031A	RB19028A	CPB025W	Lab Control Sample (LCS)
LCD1W	CPB025WC	1	NA	02/19/1622:43	02/17/1612:45	RB19032A	RB19028A	CPB025W	LCS Duplicate
CAFB-IDW-W-022016	B094-03	0.99	NA	02/19/1623:44	02/17/1612:45	RB19035A	RB19028A	CPB025W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
TCLP PESTICIDES

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : F9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	CPB025WB	1	NA	02/19/1622:02	02/17/1612:45	RB19030A	RB19028A	CPB025W	Method Blank
LCS1W	CPB025WL	1	NA	02/19/1622:23	02/17/1612:45	RB19031A	RB19028A	CPB025W	Lab Control Sample (LCS)
LCD1W	CPB025WC	1	NA	02/19/1622:43	02/17/1612:45	RB19032A	RB19028A	CPB025W	LCS Duplicate
MBLK2W	TXB005SB	10	NA	02/19/1623:04	02/17/1612:45	RB19033A	RB19028A	CPB025W	Method Blank
CAFB-IDW-S-022016	B094-02	10	NA	02/19/1623:24	02/17/1612:45	RB19034A	RB19028A	CPB025W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
HERBICIDES

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : GCT016

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HEB007WB	1	NA	02/22/1612:58	02/17/1613:59	WB19018A	WB19017A	HEB007W	Method Blank
LCS1W	HEB007WL	1	NA	02/19/1619:44	02/17/1613:59	WB19012A	WB19002A	HEB007W	Lab Control Sample (LCS)
LCD1W	HEB007WC	1	NA	02/19/1615:47	02/17/1613:59	WB19005A	WB19002A	HEB007W	LCS Duplicate
CAFB-IDW-W-022016	B094-03	10	NA	02/22/1613:32	02/17/1613:59	WB19019A	WB19017A	HEB007W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
TCLP HERBICIDES

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : GCT016

LEACHATE

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HEB007WB	1	NA	02/22/1612:58	02/17/1613:59	WB19018A	WB19017A	HEB007W	Method Blank
LCS1W	HEB007WL	1	NA	02/19/1619:44	02/17/1613:59	WB19012A	WB19002A	HEB007W	Lab Control Sample (LCS)
LCD1W	HEB007WC	1	NA	02/19/1615:47	02/17/1613:59	WB19005A	WB19002A	HEB007W	LCS Duplicate
MBLK2W	TXB005SB	50	NA	02/19/1616:20	02/17/1613:59	WB19006A	WB19002A	HEB007W	Method Blank
CAFB-IDW-S-022016	B094-02	50	NA	02/19/1616:54	02/17/1613:59	WB19007A	WB19002A	HEB007W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
TOTAL METALS BY ICP-MS

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMB025WB	1	NA	02/23/1623:30	02/17/1611:22	F6B10110	F6B10108	IMB025W	Method Blank
LCS1W	IMB025WL	1	NA	02/23/1623:34	02/17/1611:22	F6B10111	F6B10108	IMB025W	Lab Control Sample (LCS)
CAFB-IDW-W-022016MS	B094-03M	1	NA	02/23/1623:38	02/17/1611:22	F6B10112	F6B10108	IMB025W	Matrix Spike Sample (MS)
CAFB-IDW-W-022016AS	B094-03A	1	NA	02/23/1623:42	02/17/1611:22	F6B10113	F6B10108	IMB025W	Analytical Spike Sample
CAFB-IDW-W-022016	B094-03	1	NA	02/23/1623:47	02/17/1611:22	F6B10114	F6B10108	IMB025W	Field Sample
CAFB-IDW-W-022016DL	B094-03J	5	NA	02/23/1623:51	02/17/1611:22	F6B10115	F6B10108	IMB025W	Diluted Sample
CAFB-IDW-W-022016DUP	B094-03D	1	NA	02/23/1623:55	02/17/1611:22	F6B10116	F6B10108	IMB025W	Duplicate Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
TCLP METALS BY ICP

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : T-ID8

LEACHATE

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IPB034WB	1	NA	02/25/1619:43	02/25/1611:30	ID8B025036	ID8B025034	IPB034W	Method Blank
LCS1W	IPB034WL	1	NA	02/25/1619:46	02/25/1611:30	ID8B025037	ID8B025034	IPB034W	Lab Control Sample (LCS)
MBLK2W	TXB005SB	5	NA	02/25/1620:08	02/25/1611:30	ID8B025044	ID8B025042	IPB034W	Method Blank
CAFB-IDW-S-022016MS	B094-02M	5	NA	02/25/1620:24	02/25/1611:30	ID8B025049	ID8B025042	IPB034W	Matrix Spike Sample (MS)
CAFB-IDW-S-022016DUP	B094-02D	5	NA	02/29/1614:21	02/25/1611:30	ID8B028036	ID8B02B033	IPB034W	Duplicate Sample
CAFB-IDW-S-022016AS	B094-02A	5	NA	02/29/1614:31	02/25/1611:30	ID8B028037	ID8B028033	IPB034W	Analytical Spike Sample
CAFB-IDW-S-022016	B094-02R	5	NA	02/29/1614:34	02/25/1611:30	ID8B028038	ID8B028033	IPB034W	Field Sample
CAFB-IDW-S-022016DL	B094-02J	25	NA	02/29/1614:37	02/25/1611:30	ID8B028039	ID8B028033	IPB034W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : TI047

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGB009WB	1	NA	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	Method Blank
LCS1W	HGB009WL	1	NA	02/18/1619:19	02/18/1614:10	M47B007038	M47B007	HGB009W	Lab Control Sample (LCS)
CAFB-IDW-W-022016	B094-03	1	NA	02/18/1619:24	02/18/1614:10	M47B007040	M47B007	HGB009W	Field Sample
CAFB-IDW-W-022016MS	B094-03M	1	NA	02/18/1619:28	02/18/1614:10	M47B007042	M47B007	HGB009W	Matrix Spike Sample (MS)
CAFB-IDW-W-022016DUP	B094-03D	1	NA	02/18/1619:30	02/18/1614:10	M47B007043	M47B007	HGB009W	Duplicate Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
TCLP MERCURY

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16B094
Instrument ID : TI047

LEACHATE

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGB009WB	1	NA	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	Method Blank
LCS1W	HGB009WL	1	NA	02/18/1619:19	02/18/1614:10	M47B007038	M47B007	HGB009W	Lab Control Sample (LCS)
MBLK2W	TXB005SB	1	NA	02/18/1619:32	02/1B/1614:10	M47B007044	M47B007	HGB009W	Method Blank
CAFB-IDW-S-022016	B094-02	1	NA	02/18/1619:40	02/18/1614:10	M47B007048	M47B007	HGB009W	Field Sample
CAFB-IDW-S-022016MS	B094-02M	1	NA	02/18/1619:45	02/18/1614:10	M47B007050	M47B007	HGB009W	Matrix Spike Sample (MS)
CAFB-IDW-S-022016DUP	B094-02D	1	NA	02/18/1619:47	02/18/1614:10	M47B007051	M47B007	HGB009W	Duplicate Sample

FN - Filename
% Moist - Percent Moisture

RESULTS SUMMARIES

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 20:10
Sample ID:	TB-021016	Date Analyzed:	02/17/16 20:10
Lab Samp ID:	B094-01N	Dilution Factor:	1
Lab File ID:	RBR230	Matrix :	WATER
Ext Btch ID:	VOF3B10	% Moisture :	NA
Calib. Ref.:	RAR090	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.32	10.00	93.2	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/24/16 16:54
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/24/16 16:54
Lab Samp ID:	B094-03N	Dilution Factor:	10
Lab File ID:	RBW467	Matrix :	WATER
Ext Btch ID:	VO06B17	% Moisture :	NA
Calib. Ref.:	RBW406	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	10	1.0	2.0
2-BUTANONE	ND	100	20	40
CARBON TETRACHLORIDE	ND	10	1.0	2.0
CHLOROBENZENE	ND	10	1.0	2.0
CHLOROFORM	ND	10	1.0	2.0
1,4-DICHLOROBENZENE	ND	10	1.0	2.0
1,2-DICHLOROETHANE	ND	10	1.0	2.0
1,1-DICHLOROETHENE	ND	10	1.0	2.0
TETRACHLOROETHENE	ND	10	1.5	2.0
TRICHLOROETHENE	ND	10	1.0	2.0
VINYL CHLORIDE	ND	10	1.2	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98.6	100.0	98.6	70-120
4-BROMOFLUOROBENZENE	92.7	100.0	92.7	75-120
TOLUENE-D8	107	100.0	107	85-120
DIBROMOFLUOROMETHANE	105	100.0	105	85-115

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/22/16 17:51
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/22/16 17:51
Lab Samp ID:	B094-02	Dilution Factor:	10
Lab File ID:	RBB161	Matrix :	LEACHATE
Ext Btch ID:	VS03B07	% Moisture :	NA
Calib. Ref.:	RIB382	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	50	5.0	10
2-BUTANONE	ND	100	25	50
CARBON TETRACHLORIDE	ND	50	5.4	10
CHLOROBENZENE	ND	50	5.0	10
CHLOROFORM	ND	50	5.0	10
1,4-DICHLOROBENZENE	ND	50	5.0	10
1,2-DICHLOROETHANE	ND	50	5.0	10
1,1-DICHLOROETHENE	ND	50	5.0	10
TETRACHLOROETHENE	ND	50	5.0	10
TRICHLOROETHENE	ND	50	5.0	10
VINYL CHLORIDE	ND	50	6.1	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	413	500.0	82.7	70-120
4-BROMOFLUOROBENZENE	549	500.0	110	75-120
TOLUENE-D8	534	500.0	107	85-120
DIBROMOFLUOROMETHANE	465	500.0	93.0	85-115

DateTime Leached: 02/18/16 18:00

METHOD SW3520C/8270D
SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/22/16 13:54
Lab Samp ID:	B094-03	Dilution Factor:	5.9
Lab File ID:	RBJ220	Matrix :	WATER
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	59	15	30
2,4,6-TRICHLOROPHENOL	ND	59	15	30
2,4-DINITROTOLUENE	ND	59	15	30
2-METHYLPHENOL	ND	59	15	30
4-METHYLPHENOL (1)	ND	59	15	30
HEXACHLOROBENZENE	ND	59	15	30
HEXACHLOROBUTADIENE	ND	59	15	30
HEXACHLOROETHANE	ND	59	15	30
NITROBENZENE	ND	59	15	30
PENTACHLOROPHENOL	ND	120	15	30
PYRIDINE	ND	240	67	120

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	60.9	70.80	86.0	40-125
2-FLUOROBIPHENYL	14.4	23.60	61.0	50-110
2-FLUOROPHENOL	43.6	70.80	61.6	20-110
NITROBENZENE-D5	16.6	23.60	70.3	40-110
PHENOL-D5	52.5	70.80	74.2	10-115
TERPHENYL-D14	13.8	23.60	58.5	50-135

(1): 4-Methylphenol cannot be separated from 3-Methylphenol

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/22/16 12:16
Lab Samp ID:	B094-02	Dilution Factor:	10
Lab File ID:	RBJ215	Matrix :	LEACHATE
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	100	25	50
2,4,6-TRICHLOROPHENOL	ND	100	25	50
2,4-DINITROTOLUENE	ND	100	25	50
2-METHYLPHENOL	ND	100	25	50
4-METHYLPHENOL (1)	ND	100	25	50
HEXACHLOROBENZENE	ND	100	25	50
HEXACHLOROBUTADIENE	ND	100	25	50
HEXACHLOROETHANE	ND	100	25	50
NITROBENZENE	ND	100	25	50
PENTACHLOROPHENOL	ND	200	25	50
PYRIDINE	ND	400	110	200

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	508	600.0	84.6	40-125
2-FLUOROBIPHENYL	157	200.0	78.7	50-110
2-FLUOROPHENOL	351	600.0	58.5	20-110
NITROBENZENE-D5	140	200.0	70.1	40-110
PHENOL-D5	428	600.0	71.4	10-115
TERPHENYL-D14	164	200.0	82.0	50-135

(1): Cannot be separated from 3-Methylphenol
DateTime Leached: 02/16/16 17:30

METHOD SW3520C/8081B
PESTICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/19/16 23:44
Lab Samp ID:	B094-03	Dilution Factor:	0.99
Lab File ID:	RB19035A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)		LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)	0.028J	0.099	0.0049	0.0099
HEPTACHLOR	(ND)	ND	0.099	0.0069	0.0099
HEPTACHLOR EPOXIDE	(ND)	0.013J	0.099	0.0049	0.0099
GAMMA-CHLORDANE	(ND)	ND	0.099	0.0049	0.0099
ALPHA-CHLORDANE	(ND)	ND	0.099	0.0049	0.0099
ENDRIN	(ND)	ND	0.099	0.0079	0.0099
METHOXYCHLOR	(ND)	ND	0.99	0.050	0.099
TOXAPHENE	(ND)	ND	2.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS		SPK_AMT	% RECOVERY		QC LIMIT
TETRACHLORO-M-XYLENE	(0.3430)	0.3897	0.4000	(85.8)	97.4	25-140
DECACHLOROBIPHENYL	(0.2661)	0.3351	0.4000	(66.5)	83.8	30-135

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Final result indicated by ( )

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/19/16 23:24
Lab Samp ID:	B094-02	Dilution Factor:	10
Lab File ID:	RB19034A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND) | ND	1.0	0.050	0.10
HEPTACHLOR	(ND) | ND	1.0	0.070	0.10
HEPTACHLOR EPOXIDE	(ND) | ND	1.0	0.050	0.10
GAMMA-CHLORDANE	(ND) | ND	1.0	0.050	0.10
ALPHA-CHLORDANE	(ND) | ND	1.0	0.050	0.10
ENDRIN	(ND) | ND	1.0	0.080	0.10
METHOXYCHLOR	(ND) | ND	10	0.50	1.0
TOXAPHENE	(ND) | ND	20	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(3.067) | 3.768	4.000	(76.7) | 94.2	25-140
DECACHLOROBIPHENYL	(3.227) | 3.707	4.000	(80.7) | 92.7	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

DateTime Leached: 02/16/16 17:30

METHOD 8151A
HERBICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/22/16 13:32
Lab Samp ID:	B094-03	Dilution Factor:	10
Lab File ID:	WB19019A	Matrix :	WATER
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19017A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	4.0	1.0	2.0
2,4,5-TP (SILVEX)	(ND)|ND	4.0	1.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	5.505|(6.189)	10.00	55.1|(61.9)	50-130

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/19/16 16:54
Lab Samp ID:	B094-02	Dilution Factor:	50
Lab File ID:	WB19007A	Matrix :	LEACHATE
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19002A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	20	5.0	10
2,4,5-TP (SILVEX)	(ND)|ND	20	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	323.3|(336.1)	500.0	64.7|(67.2)	50-130

DateTime Leached: 02/16/16 17:30

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
SDG NO.	: 16B094	Date Extracted:	02/17/16 11:22
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/23/16 23:47
Lab Samp ID:	B094-03	Dilution Factor:	1
Lab File ID:	F6B10114	Matrix :	WATER
Ext Btch ID:	IMB025W	% Moisture :	NA
Calib. Ref.:	F6B10108	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	4.14	1.00	0.200	0.100
Barium	121	1.00	0.500	0.250
Cadmium	0.434J	1.00	0.200	0.100
Chromium, total	50.9	1.00	0.200	0.100
Lead	9.83	1.00	0.200	0.100
Selenium	10.7	1.00	0.300	0.150
Silver	ND	1.00	0.200	0.100

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	02/10/16 10:51
Project	: CANNON AFB PBR	Date Received:	02/11/16
SDG NO.	: 16B094	Date Extracted:	02/25/16 11:30
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/29/16 14:34
Lab Samp ID:	B094-02R	Dilution Factor:	5
Lab File ID:	ID8B028038	Matrix :	LEACHATE
Ext Btch ID:	IPB034W	% Moisture :	NA
Calib. Ref.:	ID8B028033	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	0.0306J	0.0500	0.0150	0.0250
Barium	1.26	0.0500	0.00500	0.0100
Cadmium	ND	0.0500	0.00500	0.0100
Chromium	0.0511	0.0500	0.00750	0.0150
Lead	0.0487J	0.0500	0.00850	0.0150
Selenium	0.0265J	0.0500	0.0125	0.0250
Silver	ND	0.0500	0.00750	0.0150

DateTime Leached: 02/16/16 17:30

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 168094

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGB009WB	ND	1	NA	0.50	0.054	0.10	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	NA	NA
LCS1W	HGB009WL	2.53	1	NA	0.50	0.054	0.10	02/18/1619:19	02/18/1614:10	M47B007038	M47B007	HGB009W	NA	NA
CAFB-IDW-W-022016	B094-03	ND	1	NA	0.50	0.054	0.10	02/18/1619:24	02/18/1614:10	M47B007040	M47B007	HGB009W	02/10/1610:58	02/11/16
CAFB-IDW-W-022016MS	B094-03M	2.52	1	NA	0.50	0.054	0.10	02/18/1619:28	02/18/1614:10	M47B007042	M47B007	HGB009W	02/10/1610:58	02/11/16
CAFB-IDW-W-022016DUP	B094-03D	ND	1	NA	0.50	0.054	0.10	02/18/1619:30	02/18/1614:10	M47B007043	M47B007	HGB009W	02/10/1610:58	02/11/16

METHOD SW1311/7470A
TCLP MERCURY

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16B094

Matrix : LEACHATE
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGB009WB	ND	1	NA	0.50	0.054	0.10	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	NA	NA
LCS1W	HGB009WL	2.53	1	NA	0.50	0.054	0.10	02/18/1619:19	02/18/1614:10	M47B007038	M47B007	HGB009W	NA	NA
MBLK2W	TXB005SB	ND	1	NA	5.0	0.54	1.0	02/18/1619:32	02/18/1614:10	M47B007044	M47B007	HGB009W	NA	NA
CAFB-IDW-S-022016	B094-02	ND	1	NA	5.0	0.54	1.0	02/18/1619:40	02/18/1614:10	M47B007048	M47B007	HGB009W	02/10/1610:51	02/11/16
CAFB-IDW-S-022016MS	B094-02M	23.8	1	NA	5.0	0.54	1.0	02/18/1619:45	02/18/1614:10	M47B007050	M47B007	HGB009W	02/10/1610:51	02/11/16
CAFB-IDW-S-022016DUP	B094-02D	ND	1	NA	5.0	0.54	1.0	02/18/1619:47	02/18/1614:10	M47B007051	M47B007	HGB009W	02/10/1610:51	02/11/16

DateTime Leached: 02/16/16 17:30
Note: 5 ml leachate was diluted to 50 ml reagent water prior to digestion.

QC SUMMARIES

METHOD BLANK

Method: 8260B

QC Measure: VOF3B10B

Associated Samples:

TB-021016

QC Measure: VO06B17B

Associated Samples:

CAFB-IDW-W-022016

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 15:00
Sample ID:	MBLK1W	Date Analyzed:	02/17/16 15:00
Lab Samp ID:	VOF3B10B	Dilution Factor:	1
Lab File ID:	RBR219	Matrix :	WATER
Ext Btch ID:	VOF3B10	% Moisture :	NA
Calib. Ref.:	RAR090	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.20	10.00	92.0	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.42	10.00	94.2	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/24/16
Batch No.	: 16B094	Date Extracted:	02/24/16 12:54
Sample ID	: MBLK2W	Date Analyzed:	02/24/16 12:54
Lab Samp ID	: V006B17B	Dilution Factor:	1
Lab File ID	: RBW458	Matrix :	WATER
Ext Btch ID	: V006B17	% Moisture :	NA
Calib. Ref.	: RBW406	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.46	10.00	94.6	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.7	10.00	107	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

Method: 8260B

QC Measure: VS03B07B

Associated Samples:

CAFB-IDW-S-022016
TVB003SB

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/22/16
Batch No.	: 16B094	Date Extracted:	02/22/16 16:55
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 16:55
Lab Samp ID:	VS03B07B	Dilution Factor:	1
Lab File ID:	RBB159	Matrix :	WATER
Ext Btch ID:	VS03B07	% Moisture :	NA
Calib. Ref.:	RIB382	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	5.0	0.50	1.0
2-BUTANONE	ND	10	2.5	5.0
CARBON TETRACHLORIDE	ND	5.0	0.54	1.0
CHLOROBENZENE	ND	5.0	0.50	1.0
CHLOROFORM	ND	5.0	0.50	1.0
1,4-DICHLOROBENZENE	ND	5.0	0.50	1.0
1,2-DICHLOROETHANE	ND	5.0	0.50	1.0
1,1-DICHLOROETHENE	ND	5.0	0.50	1.0
TETRACHLOROETHENE	ND	5.0	0.50	1.0
TRICHLOROETHENE	ND	5.0	0.50	1.0
VINYL CHLORIDE	ND	5.0	0.61	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	42.4	50.00	84.8	70-120
4-BROMOFLUOROBENZENE	53.6	50.00	107	75-120
TOLUENE-D8	53.5	50.00	107	85-120
DIBROMOFLUOROMETHANE	47.1	50.00	94.1	85-115

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/22/16
Batch No.	: 16B094	Date Extracted:	02/22/16 17:23
Sample ID:	MBLK2W	Date Analyzed:	02/22/16 17:23
Lab Samp ID:	TVB003SB	Dilution Factor:	10
Lab File ID:	RBB160	Matrix :	LEACHATE
Ext Btch ID:	VS03B07	% Moisture :	NA
Calib. Ref.:	RIB382	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	50	5.0	10
2-BUTANONE	ND	100	25	50
CARBON TETRACHLORIDE	ND	50	5.4	10
CHLOROBENZENE	ND	50	5.0	10
CHLOROFORM	ND	50	5.0	10
1,4-DICHLOROBENZENE	ND	50	5.0	10
1,2-DICHLOROETHANE	ND	50	5.0	10
1,1-DICHLOROETHENE	ND	50	5.0	10
TETRACHLOROETHENE	ND	50	5.0	10
TRICHLOROETHENE	ND	50	5.0	10
VINYL CHLORIDE	ND	50	6.1	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	413	500.0	82.6	70-120
4-BROMOFLUOROBENZENE	543	500.0	109	75-120
TOLUENE-D8	541	500.0	108	85-120
DIBROMOFLUOROMETHANE	466	500.0	93.1	85-115

DateTime Leached: 02/18/16 18:00

Method: 8270D

QC Measure: SVB018WB

Associated Samples:

CAFB-IDW-W-022016

METHOD SW3520C/8270D
SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 10:39
Lab Samp ID:	SVB018WB	Dilution Factor:	1
Lab File ID:	RBJ210	Matrix :	WATER
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4,6-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4-DINITROTOLUENE	ND	10	2.5	5.0
2-METHYLPHENOL	ND	10	2.5	5.0
4-METHYLPHENOL (1)	ND	10	2.5	5.0
HEXACHLOROBENZENE	ND	10	2.5	5.0
HEXACHLOROBUTADIENE	ND	10	2.5	5.0
HEXACHLOROETHANE	ND	10	2.5	5.0
NITROBENZENE	ND	10	2.5	5.0
PENTACHLOROPHENOL	ND	20	2.5	5.0
PYRIDINE	ND	40	11	20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	52.6	60.00	87.7	40-125
2-FLUOROBIPHENYL	16.7	20.00	83.3	50-110
2-FLUOROPHENOL	37.8	60.00	63.1	20-110
NITROBENZENE-D5	14.6	20.00	73.1	40-110
PHENOL-D5	45.3	60.00	75.5	10-115
TERPHENYL-D14	15.6	20.00	78.2	50-135

(1): 4-Methylphenol cannot be separated from 3-Methylphenol

Method: 8270D

QC Measure: SVB018WB

Associated Samples:

CAFB-IDW-S-022016
TXB005SB

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 10:39
Lab Samp ID:	SVB018WB	Dilution Factor:	1
Lab File ID:	RBJ210	Matrix :	WATER
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4,6-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4-DINITROTOLUENE	ND	10	2.5	5.0
2-METHYLPHENOL	ND	10	2.5	5.0
4-METHYLPHENOL (1)	ND	10	2.5	5.0
HEXACHLOROBENZENE	ND	10	2.5	5.0
HEXACHLOROBUTADIENE	ND	10	2.5	5.0
HEXACHLOROETHANE	ND	10	2.5	5.0
NITROBENZENE	ND	10	2.5	5.0
PENTACHLOROPHENOL	ND	20	2.5	5.0
PYRIDINE	ND	40	11	20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	52.6	60.00	87.7	40-125
2-FLUOROBIPHENYL	16.7	20.00	83.3	50-110
2-FLUOROPHENOL	37.8	60.00	63.1	20-110
NITROBENZENE-D5	14.6	20.00	73.1	40-110
PHENOL-D5	45.3	60.00	75.5	10-115
TERPHENYL-D14	15.6	20.00	78.2	50-135

(1): Cannot be separated from 3-Methylphenol

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	MBLK2W	Date Analyzed:	02/22/16 11:38
Lab Samp ID:	TXB005SB	Dilution Factor:	10
Lab File ID:	RBJ213	Matrix :	LEACHATE
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	100	25	50
2,4,6-TRICHLOROPHENOL	ND	100	25	50
2,4-DINITROTOLUENE	ND	100	25	50
2-METHYLPHENOL	ND	100	25	50
4-METHYLPHENOL (1)	ND	100	25	50
HEXACHLOROBENZENE	ND	100	25	50
HEXACHLOROBUTADIENE	ND	100	25	50
HEXACHLOROETHANE	ND	100	25	50
NITROBENZENE	ND	100	25	50
PENTACHLOROPHENOL	ND	200	25	50
PYRIDINE	ND	400	110	200

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	514	600.0	85.7	40-125
2-FLUOROBIPHENYL	161	200.0	80.4	50-110
2-FLUOROPHENOL	378	600.0	63.1	20-110
NITROBENZENE-D5	144	200.0	71.9	40-110
PHENOL-D5	447	600.0	74.6	10-115
TERPHENYL-D14	169	200.0	84.6	50-135

(1): Cannot be separated from 3-Methylphenol
DateTime Leached: 02/16/16 17:30

Method: 8081B

QC Measure: CPB025WB

Associated Samples:

CAFB-IDW-W-022016

METHOD SW3520C/8081B
PESTICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	MBLK1W	Date Analyzed:	02/19/16 22:02
Lab Samp ID:	CPB025WB	Dilution Factor:	1
Lab File ID:	RB19030A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND) | ND	0.10	0.0050	0.010
HEPTACHLOR	(ND) | ND	0.10	0.0070	0.010
HEPTACHLOR EPOXIDE	(ND) | ND	0.10	0.0050	0.010
GAMMA-CHLORDANE	(ND) | ND	0.10	0.0050	0.010
ALPHA-CHLORDANE	(ND) | ND	0.10	0.0050	0.010
ENDRIN	(ND) | ND	0.10	0.0080	0.010
METHOXYCHLOR	(ND) | ND	1.0	0.050	0.10
TOXAPHENE	(ND) | ND	2.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.2941) | 0.3537	0.4000	(73.5) | 88.4	25-140
DECACHLOROBIPHENYL	(0.3017) | 0.3451	0.4000	(75.4) | 86.3	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

Method: 8081B

QC Measure: CPB025WB

Associated Samples:

CAFB-IDW-S-022016
TXB005SB

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	MBLK1W	Date Analyzed:	02/19/16 22:02
Lab Samp ID:	CPB025WB	Dilution Factor:	1
Lab File ID:	RB19030A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND) | ND	0.10	0.0050	0.010
HEPTACHLOR	(ND) | ND	0.10	0.0070	0.010
HEPTACHLOR EPOXIDE	(ND) | ND	0.10	0.0050	0.010
GAMMA-CHLORDANE	(ND) | ND	0.10	0.0050	0.010
ALPHA-CHLORDANE	(ND) | ND	0.10	0.0050	0.010
ENDRIN	(ND) | ND	0.10	0.0080	0.010
METHOXYCHLOR	(ND) | ND	1.0	0.050	0.10
TOXAPHENE	(ND) | ND	2.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.2941) | 0.3537	0.4000	(73.5) | 88.4	25-140
DECACHLOROBIPHENYL	(0.3017) | 0.3451	0.4000	(75.4) | 86.3	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	MBLK2W	Date Analyzed:	02/19/16 23:04
Lab Samp ID:	TXB005SB	Dilution Factor:	10
Lab File ID:	RB19033A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)|ND	1.0	0.050	0.10
HEPTACHLOR	(ND)|ND	1.0	0.070	0.10
HEPTACHLOR EPOXIDE	(ND)|ND	1.0	0.050	0.10
GAMMA-CHLORDANE	(ND)|ND	1.0	0.050	0.10
ALPHA-CHLORDANE	(ND)|ND	1.0	0.050	0.10
ENDRIN	(ND)|ND	1.0	0.080	0.10
METHOXYCHLOR	(ND)|ND	10	0.50	1.0
TOXAPHENE	(ND)|ND	20	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(3.123)|3.660	4.000	(78.1)|91.5	25-140
DECACHLOROBIPHENYL	(3.191)|3.652	4.000	(79.8)|91.3	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

DateTime Leached: 02/16/16 17:30

Method: 8151A

QC Measure: HEB007WB

Associated Samples:

CAFB-IDW-W-022016

METHOD 8151A
HERBICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 12:58
Lab Samp ID:	HEB007WB	Dilution Factor:	1
Lab File ID:	WB19018A	Matrix :	WATER
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19017A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	0.40	0.10	0.20
2,4,5-TP (SILVEX)	(ND)|ND	0.40	0.10	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	10.31|(10.52)	10.00	103|(105)	50-130

Method: 8151A

QC Measure: HEB007WB

Associated Samples:

CAFB-IDW-S-022016
TXB005SB

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 12:58
Lab Samp ID:	HEB007WB	Dilution Factor:	1
Lab File ID:	WB19018A	Matrix :	WATER
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19017A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	0.40	0.10	0.20
2,4,5-TP (SILVEX)	(ND)|ND	0.40	0.10	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	10.31|(10.52)	10.00	103|(105)	50-130

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	MBLK2W	Date Analyzed:	02/19/16 16:20
Lab Samp ID:	TXB005SB	Dilution Factor:	50
Lab File ID:	WB19006A	Matrix :	LEACHATE
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19002A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	20	5.0	10
2,4,5-TP (SILVEX)	(ND)|ND	20	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	286.6|(298.8)	500.0	57.3|(59.8)	50-130

DateTime Leached: 02/16/16 17:30

Method: 6020A

QC Measure: IMB025WB

Associated Samples:

CAFB-IDW-W-022016

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
SDG NO.	: 16B094	Date Extracted:	02/17/16 11:22
Sample ID:	MBLK1W	Date Analyzed:	02/23/16 23:30
Lab Samp ID:	IMB025WB	Dilution Factor:	1
Lab File ID:	F6B10110	Matrix :	WATER
Ext Btch ID:	IMB025W	% Moisture :	NA
Calib. Ref.:	F6B10108	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	ND	1.00	0.200	0.100
Barium	ND	1.00	0.500	0.250
Cadmium	ND	1.00	0.200	0.100
Chromium, total	ND	1.00	0.200	0.100
Lead	ND	1.00	0.200	0.100
Selenium	ND	1.00	0.300	0.150
Silver	ND	1.00	0.200	0.100

Method: 6010C

QC Measure: IPB034WB

Associated Samples:

CAFB-IDW-S-022016
TXB005SB

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/25/16
SDG NO.	: 16B094	Date Extracted:	02/25/16 11:30
Sample ID:	MBLK1W	Date Analyzed:	02/25/16 19:43
Lab Samp ID:	IPB034WB	Dilution Factor:	1
Lab File ID:	ID8B025036	Matrix :	WATER
Ext Btch ID:	IPB034W	% Moisture :	NA
Calib. Ref.:	ID8B025034	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	ND	0.0100	0.00300	0.00500
Barium	ND	0.0100	0.00100	0.00200
Cadmium	ND	0.0100	0.00100	0.00200
Chromium	ND	0.0100	0.00150	0.00300
Lead	ND	0.0100	0.00170	0.00300
Selenium	ND	0.0100	0.00250	0.00500
Silver	ND	0.0100	0.00150	0.00300

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/25/16
SDG NO.	: 16B094	Date Extracted:	02/25/16 11:30
Sample ID:	MBLK2W	Date Analyzed:	02/25/16 20:08
Lab Samp ID:	TXB005SB	Dilution Factor:	5
Lab File ID:	ID8B025044	Matrix :	LEACHATE
Ext Btch ID:	IPB034W	% Moisture :	NA
Calib. Ref.:	ID8B025042	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	ND	0.0500	0.0150	0.0250
Barium	0.00585J	0.0500	0.00500	0.0100
Cadmium	ND	0.0500	0.00500	0.0100
Chromium	ND	0.0500	0.00750	0.0150
Lead	ND	0.0500	0.00850	0.0150
Selenium	ND	0.0500	0.0125	0.0250
Silver	ND	0.0500	0.00750	0.0150

DateTime Leached: 02/16/16 17:30

Method: 7470A

QC Measure: HGB009WB

Associated Samples:

CAFB-IDW-W-022016

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16B094

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGB009WB	ND	1	NA	0.50	0.054	0.10	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	NA	NA

Method: 7470A

QC Measure: HGB009WB

Associated Samples:

CAFB-IDW-S-022016
TXB005SB

METHOD SW1311/7470A
TCLP MERCURY

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16B094

Matrix : LEACHATE
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGB009WB	ND	1	NA	0.50	0.054	0.10	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	NA	NA
MBLK2W	TXB005SB	ND	1	NA	5.0	0.54	1.0	02/18/1619:32	02/18/1614:10	M47B007044	M47B007	HGB009W	NA	NA

LCS/LCSD

Method: 8260B

QC Measure: VOF3B10X

Associated Samples:

TB-021016

QC Measure: VOO6B17L

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VOF3B10B	VOF3B10X	VOF3B10Y		
LAB FILE ID:	RBR219	RBR220	RBR221		
DATE EXTRACTED:	02/17/1615:00	02/17/1615:28	02/17/1615:56	DATE COLLECTED:	NA
DATE ANALYZED:	02/17/1615:00	02/17/1615:28	02/17/1615:56	DATE RECEIVED:	02/17/16
PREP. BATCH:	VOF3B10	VOF3B10	VOF3B10		
CALIB. REF:	RAR090	RAR090	RAR090		

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 (%)
Benzene	ND	10.0	10.1	101	10.0	9.91	99	2	80-120	30
2-Butanone	ND	50.0	55.3	111	50.0	55.2	110	0	30-150	30
Carbon Tetrachloride	ND	10.0	11.0	110	10.0	10.7	107	3	65-140	30
Chlorobenzene	ND	10.0	10.5	105	10.0	10.4	104	1	80-120	30
Chloroform	ND	10.0	10.2	102	10.0	10.0	100	2	65-135	30
1,4-Dichlorobenzene	ND	10.0	9.74	97	10.0	9.59	96	2	75-125	30
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	10.2	102	2	70-130	30
1,1-Dichloroethene	ND	10.0	9.29	93	10.0	9.25	93	0	70-130	30
Tetrachloroethene	ND	10.0	10.3	103	10.0	10.3	103	0	45-150	30
Trichloroethene	ND	10.0	10.1	101	10.0	10.1	101	0	70-125	30
Vinyl Chloride	ND	10.0	11.4	114	10.0	12.2	122	6	50-145	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 (%)
1,2-Dichloroethane-d4	10.0	9.50	95	10.0	9.53	95	70-120
4-Bromofluorobenzene	10.0	9.69	97	10.0	9.65	96	75-120
Toluene-d8	10.0	9.40	94	10.0	9.60	96	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.4	104	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V006B17B	V006B17L	V006B17C		
LAB FILE ID:	RBW458	RBW455	RBW456		
DATE EXTRACTED:	02/24/1612:54	02/24/1611:38	02/24/1612:04	DATE COLLECTED:	NA
DATE ANALYZED:	02/24/1612:54	02/24/1611:38	02/24/1612:04	DATE RECEIVED:	02/24/16
PREP. BATCH:	V006B17	V006B17	V006B17		
CALIB. REF:	RBW406	RBW406	RBW406		

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 (%)
Benzene	ND	10.0	10.9	109	10.0	10.4	104	5	80-120	30
2-Butanone	ND	50.0	48.3	97	50.0	45.4	91	6	30-150	30
Carbon Tetrachloride	ND	10.0	10.0	100	10.0	9.86	99	1	65-140	30
Chlorobenzene	ND	10.0	10.8	108	10.0	10.4	104	4	80-120	30
Chloroform	ND	10.0	10.4	104	10.0	9.83	98	6	65-135	30
1,4-Dichlorobenzene	ND	10.0	10.9	109	10.0	10.9	109	0	75-125	30
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	9.70	97	7	70-130	30
1,1-Dichloroethene	ND	10.0	10.8	108	10.0	10.6	106	2	70-130	30
Tetrachloroethene	ND	10.0	11.0	110	10.0	10.9	109	1	45-150	30
Trichloroethene	ND	10.0	10.7	107	10.0	10.6	106	1	70-125	30
Vinyl Chloride	ND	10.0	9.12	91	10.0	9.03	90	1	50-145	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 (%)
1,2-Dichloroethane-d4	10.0	9.77	98	10.0	9.49	95	70-120
4-Bromofluorobenzene	10.0	9.96	100	10.0	10.4	104	75-120
Toluene-d8	10.0	10.6	106	10.0	10.6	106	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.4	104	85-115

Method: 8260B

QC Measure: VS03B07L

Associated Samples:

CAFB-IDW-S-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VS03B07B	VS03B07L	VS03B07C		
LAB FILE ID:	RBB159	RBB157	RBB158		
DATE EXTRACTED:	02/22/1616:55	02/22/1615:59	02/22/1616:27	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1616:55	02/22/1615:59	02/22/1616:27	DATE RECEIVED:	02/22/16
PREP. BATCH:	VS03B07	VS03B07	VS03B07		
CALIB. REF:	RIB382	RIB382	RIB382		

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 (%)
Benzene	ND	50.0	45.9	92	50.0	43.8	88	5	80-120	30
2-Butanone	ND	250	226	90	250	222	89	2	30-150	30
Carbon Tetrachloride	ND	50.0	43.9	88	50.0	40.5	81	8	65-140	30
Chlorobenzene	ND	50.0	48.5	97	50.0	46.5	93	4	80-120	30
Chloroform	ND	50.0	41.0	82	50.0	39.0	78	5	65-135	30
1,4-Dichlorobenzene	ND	50.0	47.0	94	50.0	44.7	89	5	75-125	30
1,2-Dichloroethane	ND	50.0	41.9	84	50.0	40.1	80	4	70-130	30
1,1-Dichloroethene	ND	50.0	46.3	93	50.0	42.4	85	9	70-130	30
Tetrachloroethene	ND	50.0	42.8	86	50.0	40.0	80	7	45-150	30
Trichloroethene	ND	50.0	46.7	93	50.0	44.5	89	5	70-125	30
Vinyl Chloride	ND	50.0	47.4	95	50.0	45.5	91	4	50-145	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 (%)
1,2-Dichloroethane-d4	50.0	43.1	86	50.0	42.5	85	70-120
4-Bromofluorobenzene	50.0	49.3	99	50.0	52.3	105	75-120
Toluene-d8	50.0	52.7	105	50.0	52.3	105	85-120
Dibromofluoromethane	50.0	48.4	97	50.0	46.8	94	85-115

Method: 8270D

QC Measure: SVB018WL

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW3520C/8270D

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVB018WB	SVB018WL	SVB018WC		
LAB FILE ID:	RBJ210	RBJ211	RBJ212		
DATE EXTRACTED:	02/17/1614:30	02/17/1614:30	02/17/1614:30	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1610:39	02/22/1610:59	02/22/1611:18	DATE RECEIVED:	02/17/16
PREP. BATCH:	SVB018W	SVB018W	SVB018W		
CALIB. REF:	RBJ007	RBJ007	RBJ007		

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 (%)
2,4,5-Trichlorophenol	ND	40.0	27.2	68	40.0	29.4	73	7	50-110	30
2,4,6-Trichlorophenol	ND	40.0	26.2	66	40.0	29.5	74	12	50-115	30
2,4-Dinitrotoluene	ND	40.0	34.3	86	40.0	35.5	89	3	50-120	30
2-Methylphenol	ND	40.0	27.5	69	40.0	31.3	78	13	40-110	30
4-Methylphenol	ND	40.0	28.3	71	40.0	34.7	87	20	30-110	30
Hexachlorobenzene	ND	40.0	32.6	82	40.0	36.2	91	10	50-110	30
Hexachlorobutadiene	ND	40.0	25.4	64	40.0	26.4	66	4	25-105	30
Hexachloroethane	ND	40.0	28.1	70	40.0	29.6	74	5	30-100	30
Nitrobenzene	ND	40.0	27.6	69	40.0	28.5	71	3	45-110	30
Pentachlorophenol	ND	40.0	32.3	81	40.0	34.2	86	6	40-115	30
Pyridine	ND	80.0	44.7	56	80.0	49.1	61	9	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 (%)
2,4,6-Tribromophenol	60.0	48.5	81	60.0	55.1	92	40-125
2-Fluorobiphenyl	20.0	12.8	64	20.0	13.9	70	50-110
2-Fluorophenol	60.0	27.5	46	60.0	35.9	60	20-110
Nitrobenzene-d5	20.0	12.8	64	20.0	13.9	69	40-110
Phenol-d5	60.0	36.2	60	60.0	43.7	73	10-115
Terphenyl-d14	20.0	14.3	71	20.0	15.8	79	50-135

Method: 8270D

QC Measure: SVB018WL

Associated Samples:

CAFB-IDW-S-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3520C/8270D

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVB018WB	SVB018WL	SVB018WC		
LAB FILE ID:	RBJ210	RBJ211	RBJ212		
DATE EXTRACTED:	02/17/1614:30	02/17/1614:30	02/17/1614:30	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1610:39	02/22/1610:59	02/22/1611:18	DATE RECEIVED:	02/17/16
PREP. BATCH:	SVB018W	SVB018W	SVB018W		
CALIB. REF:	RBJ007	RBJ007	RBJ007		

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 (%)
2,4,5-Trichlorophenol	ND	40.0	27.2	68	40.0	29.4	73	7	50-110	30
2,4,6-Trichlorophenol	ND	40.0	26.2	66	40.0	29.5	74	12	50-115	30
2,4-Dinitrotoluene	ND	40.0	34.3	86	40.0	35.5	89	3	50-120	30
2-Methylphenol	ND	40.0	27.5	69	40.0	31.3	78	13	40-110	30
4-Methylphenol	ND	40.0	28.3	71	40.0	34.7	87	20	30-110	30
Hexachlorobenzene	ND	40.0	32.6	82	40.0	36.2	91	10	50-110	30
Hexachlorobutadiene	ND	40.0	25.4	64	40.0	26.4	66	4	25-105	30
Hexachloroethane	ND	40.0	28.1	70	40.0	29.6	74	5	30-100	30
Nitrobenzene	ND	40.0	27.6	69	40.0	28.5	71	3	45-110	30
Pentachlorophenol	ND	40.0	32.3	81	40.0	34.2	86	6	40-115	30
Pyridine	ND	80.0	44.7	56	80.0	49.1	61	9	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 (%)
2,4,6-Tribromophenol	60.0	48.5	81	60.0	55.1	92	40-125
2-Fluorobiphenyl	20.0	12.8	64	20.0	13.9	70	50-110
2-Fluorophenol	60.0	27.5	46	60.0	35.9	60	20-110
Nitrobenzene-d5	20.0	12.8	64	20.0	13.9	69	40-110
Phenol-d5	60.0	36.2	60	60.0	43.7	73	10-115
Terphenyl-d14	20.0	14.3	71	20.0	15.8	79	50-135

Method: 8081B

QC Measure: CPB025WB

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW3520C/8081B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	CPB025WB	CPB025WL	CPB025WC		
LAB FILE ID:	RB19030A	RB19031A	RB19032A		
DATE EXTRACTED:	02/17/1612:45	02/17/1612:45	02/17/1612:45	DATE COLLECTED:	NA
DATE ANALYZED:	02/19/1622:02	02/19/1622:23	02/19/1622:43	DATE RECEIVED:	02/17/16
PREP. BATCH:	CPB025W	CPB025W	CPB025W		
CALIB. REF:	RB19028A	RB19028A	RB19028A		

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 (%)
gamma-BHC (Lindane)	(ND)|ND	0.200	(0.155)|0.187	(78)|94	0.200	(0.171)|0.192	(86)|96	(10)|3	25-135	30
Heptachlor	(ND)|ND	0.200	(0.155)|0.183	(78)|92	0.200	(0.167)|0.202	(84)|101	(7)|10	40-130	30
Heptachlor Epoxide	(ND)|ND	0.200	(0.163)|0.187	(82)|94	0.200	(0.179)|0.204	(90)|102	(9)|9	60-130	30
gamma-Chlordane	(ND)|ND	0.200	(0.158)|0.188	(79)|94	0.200	(0.173)|0.226	(86)|113	(9)|18	60-125	30
alpha-Chlordane	(ND)|ND	0.200	(0.155)|0.190	(78)|95	0.200	(0.167)|0.206	(84)|103	(7)|8	65-125	30
Endrin	(ND)|ND	0.200	(0.183)|0.203	(92)|101	0.200	(0.199)|0.212	(100)|106	(8)|4	55-135	30
Methoxychlor	(ND)|ND	2.00	(1.90)|2.28	(95)|114	2.00	(2.05)|2.45	(102)|122	(8)|7	55-150	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 (%)
Tetrachloro-m-xylene	0.4000	(0.3074)|0.3629	(76.9)|90.7	0.4000	(0.3229)|0.3903	(80.7)|97.6	25-140
Decachlorobiphenyl	0.4000	(0.3315)|0.3709	(82.9)|92.7	0.4000	(0.3379)|0.3831	(84.5)|95.8	30-135

Method: 8081B

QC Measure: CPB025WL

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3520C/8081B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	CPB025WB	CPB025WL	CPB025WC		
LAB FILE ID:	RB19030A	RB19031A	RB19032A		
DATE EXTRACTED:	02/17/1612:45	02/17/1612:45	02/17/1612:45	DATE COLLECTED:	NA
DATE ANALYZED:	02/19/1622:02	02/19/1622:23	02/19/1622:43	DATE RECEIVED:	02/17/16
PREP. BATCH:	CPB025W	CPB025W	CPB025W		
CALIB. REF:	RB19028A	RB19028A	RB19028A		

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 (%)
gamma-BHC (Lindane)	(ND)|ND	0.200	(0.155)|0.187	(78)|94	0.200	(0.171)|0.192	(86)|96	(10)|3	25-135	30
Heptachlor	(ND)|ND	0.200	(0.155)|0.183	(78)|92	0.200	(0.167)|0.202	(84)|101	(7)|10	40-130	30
Heptachlor Epoxide	(ND)|ND	0.200	(0.163)|0.187	(82)|94	0.200	(0.179)|0.204	(90)|102	(9)|9	60-130	30
gamma-Chlordane	(ND)|ND	0.200	(0.158)|0.188	(79)|94	0.200	(0.173)|0.226	(86)|113	(9)|18	60-125	30
alpha-Chlordane	(ND)|ND	0.200	(0.155)|0.190	(78)|95	0.200	(0.167)|0.206	(84)|103	(7)|8	65-125	30
Endrin	(ND)|ND	0.200	(0.183)|0.203	(92)|101	0.200	(0.199)|0.212	(100)|106	(8)|4	55-135	30
Methoxychlor	(ND)|ND	2.00	(1.90)|2.28	(95)|114	2.00	(2.05)|2.45	(102)|122	(8)|7	55-150	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 (%)
Tetrachloro-m-xylene	0.4000	(0.3074)|0.3629	(76.9)|90.7	0.4000	(0.3229)|0.3903	(80.7)|97.6	25-140
Decachlorobiphenyl	0.4000	(0.3315)|0.3709	(82.9)|92.7	0.4000	(0.3379)|0.3831	(84.5)|95.8	30-135

Method: 8151A

QC Measure: HEB007WL

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: 8151A

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HEB007WB	HEB007WL	HEB007WC		
LAB FILE ID:	WB19018A	WB19012A	WB19005A		
DATE EXTRACTED:	02/17/1613:59	02/17/1613:59	02/17/1613:59	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1612:58	02/19/1619:44	02/19/1615:47	DATE RECEIVED:	02/17/16
PREP. BATCH:	HEB007W	HEB007W	HEB007W		
CALIB. REF:	WB19017A	WB19002A	WB19002A		

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 (%)
2,4-D	(ND)|ND	1.00	(1.00)|0.957	(100)|96	1.00	(0.982)|0.933	(98)|93	(2)|3	35-115	30
2,4,5-TP (Silvex)	(ND)|ND	1.00	0.979|(1.04)	98|(104)	1.00	0.948|(1.02)	95|(102)	3|(2)	50-115	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 (%)
2,4-DCPAA	10.00	9.926|(9.941)	99.3|(99.4)	10.00	(9.701)|9.690	(97.0)|96.9	50-130

Method: 8151A

QC Measure: HEB007WL

Associated Samples:

CAFB-IDW-S-022016

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/8151A

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HEB007WB	HEB007WL	HEB007WC		
LAB FILE ID:	WB19018A	WB19012A	WB19005A		
DATE EXTRACTED:	02/17/1613:59	02/17/1613:59	02/17/1613:59	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1612:58	02/19/1619:44	02/19/1615:47	DATE RECEIVED:	02/17/16
PREP. BATCH:	HEB007W	HEB007W	HEB007W		
CALIB. REF:	WB19017A	WB19002A	WB19002A		

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 (%)
2,4-D	(ND)|ND	1.00	(1.00)|0.957	(100)|96	1.00	(0.982)|0.933	(98)|93	(2)|3	35-115	30
2,4,5-TP (Silvex)	(ND)|ND	1.00	0.979|(1.04)	98|(104)	1.00	0.948|(1.02)	95|(102)	3|(2)	50-115	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 (%)
2,4-DCPAA	10.00	9.926|(9.941)	99.3|(99.4)	10.00	(9.701)|9.690	(97.0)|96.9	50-130

Method: 6020A

QC Measure: IMB025WL

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1W			
CONTROL NO.:	IMB025WB	IMB025WL		
LAB FILE ID:	F6B10110	F6B10111		
DATIME EXTRCTD:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	NA
DATIME ANALYZD:	02/23/1623:30	02/23/1623:34	DATE RECEIVED:	02/17/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
Arsenic	ND	30.0	29.5	98	80-120
Barium	ND	30.0	29.7	99	80-120
Cadmium	ND	30.0	29.9	100	80-120
Chromium, total	ND	30.0	29.5	98	80-120
Lead	ND	30.0	34.7	116	80-120
Selenium	ND	30.0	30.0	100	80-120
Silver	ND	30.0	28.3	94	80-120

Method: 6010C

QC Measure: IPB034WL

Associated Samples:

CAFB-IDW-S-022016

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW1311/3010A/6010C

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MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1W			
CONTROL NO.:	IPB034WB	IPB034WL		
LAB FILE ID:	ID8B025036	ID8B025037		
DATIME EXTRCTD:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	NA
DATIME ANALYZD:	02/25/1619:43	02/25/1619:46	DATE RECEIVED:	02/25/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B025034	ID8B025034		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Arsenic	ND	.5	.536	107	80-120
Barium	ND	.5	.507	101	80-120
Cadmium	ND	.5	.519	104	80-120
Chromium	ND	.5	.52	104	80-120
Lead	ND	.5	.513	103	80-120
Selenium	ND	.5	.55	110	80-120
Silver	ND	.5	.516	103	80-120

Method: 7470A

QC Measure: HGB009WL

Associated Samples:

CAFB-IDW-W-022016

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW7470A

MATRIX : WATER
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : HGB009WB HGB009WL
LAB FILE ID : M47B007037 M47B007038
DATE PREPARED : 02/18/1614:10 02/1B/1614:10
DATE ANALYZED : 02/18/1619:16 02/18/1619:19
PREP BATCH : HGB009W HGB009W
CALIBRATION REF: M47B0070 M47B0070

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	QC LIMIT (%)
Mercury	ND	2.5	2.53	101	80-120

Method: 7470A

QC Measure: HGB009WL

Associated Samples:

CAFB-IDW-S-022016

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW1311/7470A

MATRIX	: WATER	
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: HGB009WB	HGB009WL
LAB FILE ID	: M47B007037	M47B007038
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:16	02/18/1619:19
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B0070	M47B0070

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	QC LIMIT (%)
Mercury	ND	2.5	2.53	101	80-120

MS/MSD / DUPLICATE / SERIAL DILUTION / ANALYTICAL SPIKE

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	CAFB-IDW-W-022016			
CONTROL NO.:	B094-03	B094-03M		
LAB FILE IO:	F6B10114	F6B10112		
DATIME EXTRCTD:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATIME ANALYZD:	02/23/1623:47	02/23/1623:38	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Arsenic	4.14	30.0	37.7	112	80-120
Barium	121	30.0	167	151*	80-120
Cadmium	0.434J	30.0	30.1	99	80-120
Chromium, total	50.9	30.0	84.0	110	80-120
Lead	9.83	30.0	42.5	109	80-120
Selenium	10.7	30.0	46.2	118	80-120
Silver	ND	30.0	26.6	89	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	CAFB-IDW-W-022	CAFB-IDW-W-022		
EMAX SAMP ID:	B094-03	B094-03J		
LAB FILE ID:	F6B10114	F6B10115		
DATE EXTRACTED:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATE ANALYZED:	02/23/1623:47	02/23/1623:51	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Arsenic	4.14	4.04J	NA	10
Barium	121	119	2	10
Cadmium	.434J	.558J	NA	10
Chromium, total	50.9	52.2	3	10
Lead	9.83	10.5	7	10
Selenium	10.7	9.61	10	10
Silver	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	CAFB-IDW-W-022016			
CONTROL NO.:	B094-03	B094-03A		
LAB FILE ID:	F6B10114	F6B10113		
DATIME EXTRCTD:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATIME ANALYZD:	02/23/1623:47	02/23/1623:42	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Arsenic	4.14	30.0	38.5	115	75-125
Barium	121	30.0	149	93	75-125
Cadmium	0.434J	30.0	30.7	101	75-125
Chromium, total	50.9	30.0	79.7	96	75-125
Lead	9.83	30.0	43.4	112	75-125
Selenium	10.7	30.0	47.0	121	75-125
Silver	ND	30.0	25.1	84	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	CAFB-IDW-W-022	CAFB-IDW-W-022		
EMAX SAMP ID:	B094-03	B094-03D		
LAB FILE ID:	F6B10114	F6B10116		
DATE EXTRACTED:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATE ANALYZED:	02/23/1623:47	02/23/1623:55	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	DUPL RSLT (ug/L)	RPD RSLT %	QC LIMIT (%)
Arsenic	4.14	4.26	3	20
Barium	121	138	13	20
Cadmium	.434J	.45J	NA	20
Chromium, total	50.9	54.2	6	20
Lead	9.83	11.1	12	20
Selenium	10.7	10.7	0	20
Silver	ND	ND	0	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW1311/3010A/6010C

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MATRIX:	LEACHATE		% MOISTURE:	NA
DILTN FACTR:	5	5		
SAMPLE ID:	CAFB-IDW-S-022016			
CONTROL NO.:	B094-02R	B094-02M		
LAB FILE ID:	ID8B028038	ID8B025049		
DATIME EXTRCTD:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATIME ANALYZD:	02/29/1614:34	02/25/1620:24	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B025042		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Arsenic	.0306J	2.5	2.8	111	80-120
Barium	1.26	2.5	4.19	117	80-120
Cadmium	ND	2.5	2.48	99	80-120
Chromium	.0511	2.5	2.61	102	80-120
Lead	.0487J	2.5	2.6	102	80-120
Selenium	.0265J	2.5	2.93	116	80-120
Silver	ND	2.5	2.65	106	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3010A/6010C

MATRIX:	LEACHATE		% MOISTURE:	NA
DILUTION FACTOR:	5	25		
SAMPLE ID:	CAFB-IDW-S-022016	CAFB-IDW-S-022016DL		
EMAX SAMP ID:	B094-02R	B094-02J		
LAB FILE ID:	ID8B028038	ID8B028039		
DATE EXTRACTED:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATE ANALYZED:	02/29/1614:34	02/29/1614:37	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B028033		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SERIAL DIL RSLT (mg/L)	DIF RSLT %	QC LIMIT (%)
Arsenic	0.0306J	ND	NA	10
Barium	1.26	1.28	2	10
Cadmium	ND	ND	0	10
Chromium	0.0511	0.0515J	NA	10
Lead	0.0487J	ND	NA	10
Selenium	0.0265J	ND	NA	10
Silver	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW1311/3010A/6010C

==========

MATRIX: LEACHATE % MOISTURE: NA
DILTN FACTR: 5 5
SAMPLE ID: CAFB-IDW-S-022016
CONTROL NO.: B094-02R B094-02A
LAB FILE ID: ID8B028038 ID8B028037
DATIME EXTRCTD: 02/25/1611:30 02/25/1611:30 DATE COLLECTED: 02/10/16 10:51
DATIME ANALYZD: 02/29/1614:34 02/29/1614:31 DATE RECEIVED: 02/11/16
PREP. BATCH: IPB034W IPB034W
CALIB. REF: ID8B028033 ID8B028033

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	AS RSLT (mg/L)	AS % REC	QC LIMIT (%)
Arsenic	.0306J	2.5	2.75	109	75-125
Barium	1.26	2.5	3.77	100	75-125
Cadmium	ND	2.5	2.52	101	75-125
Chromium	.0511	2.5	2.62	103	75-125
Lead	.0487J	2.5	2.55	100	75-125
Selenium	.0265J	2.5	2.85	113	75-125
Silver	ND	2.5	2.58	103	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3010A/6010C

MATRIX:	LEACHATE		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	CAFB-IDW-S-022016	CAFB-IDW-S-022016DUP		
EMAX SAMP ID:	B094-02R	B094-02D		
LAB FILE ID:	ID8B028038	ID8B028036		
DATE EXTRACTED:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATE ANALYZED:	02/29/1614:34	02/29/1614:21	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B028033		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Arsenic	0.0306J	0.0196J	20	20
Barium	1.26	1.22	3	20
Cadmium	ND	ND	0	20
Chromium	0.0511	0.0476J	7	20
Lead	0.0487J	0.0509	4	20
Selenium	0.0265J	0.0177J	4	20
Silver	ND	ND	0	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW7470A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-W-022016	CAF8-IDW-W-022016MS
LAB SAMPLE ID	: B094-03	B094-03M
LAB FILE ID	: M47B007040	M47B007042
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:24	02/18/1619:28
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
Mercury	ND	2.50	2.52	101	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW7470A

MATRIX :	WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID :	CAFB-IDW-W-022016	CAFB-IDW-W-022016DUP
LAB SAMPLE ID :	B094-03	B094-03D
LAB FILE ID :	M47B007040	M47B007043
DATE PREPARED :	02/18/1614:10	02/18/1614:10
DATE ANALYZED :	02/18/1619:24	02/18/1619:30
PREP BATCH :	HGB009W	HGB009W
CALIBRATION REF:	M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
Mercury	ND	ND	0	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW1311/7470A

MATRIX	: LEACHATE	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-S-022016	CAFB-IDW-S-022016MS
LAB SAMPLE ID	: B094-02	B094-02M
LAB FILE ID	: M47B007048	M47B007050
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:40	02/18/1619:45
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
Mercury	ND	25.0	23.8	95	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW1311/7470A

MATRIX	: LEACHATE	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-S-022016	CAF8-IDW-S-022016DUP
LAB SAMPLE ID	: B094-02	B094-02D
LAB FILE ID	: M47B007048	M47B007051
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:40	02/18/1619:47
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
Mercury	ND	ND	0	20

RAW DATA

VOLATILE ORGANICS

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 20:10
Sample ID:	TB-021016	Date Analyzed:	02/17/16 20:10
Lab Samp ID:	B094-01N	Dilution Factor:	1
Lab File ID:	RBR230	Matrix :	WATER
Ext Btch ID:	VOF3B10	% Moisture :	NA
Calib. Ref.:	RAR090	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.32	10.00	93.2	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR230.D Vial: 17
Acq On : 17 Feb 2016 8:10 pm Operator: IRagas/DNguye
Sample : 16B094-01N 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 16:07 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

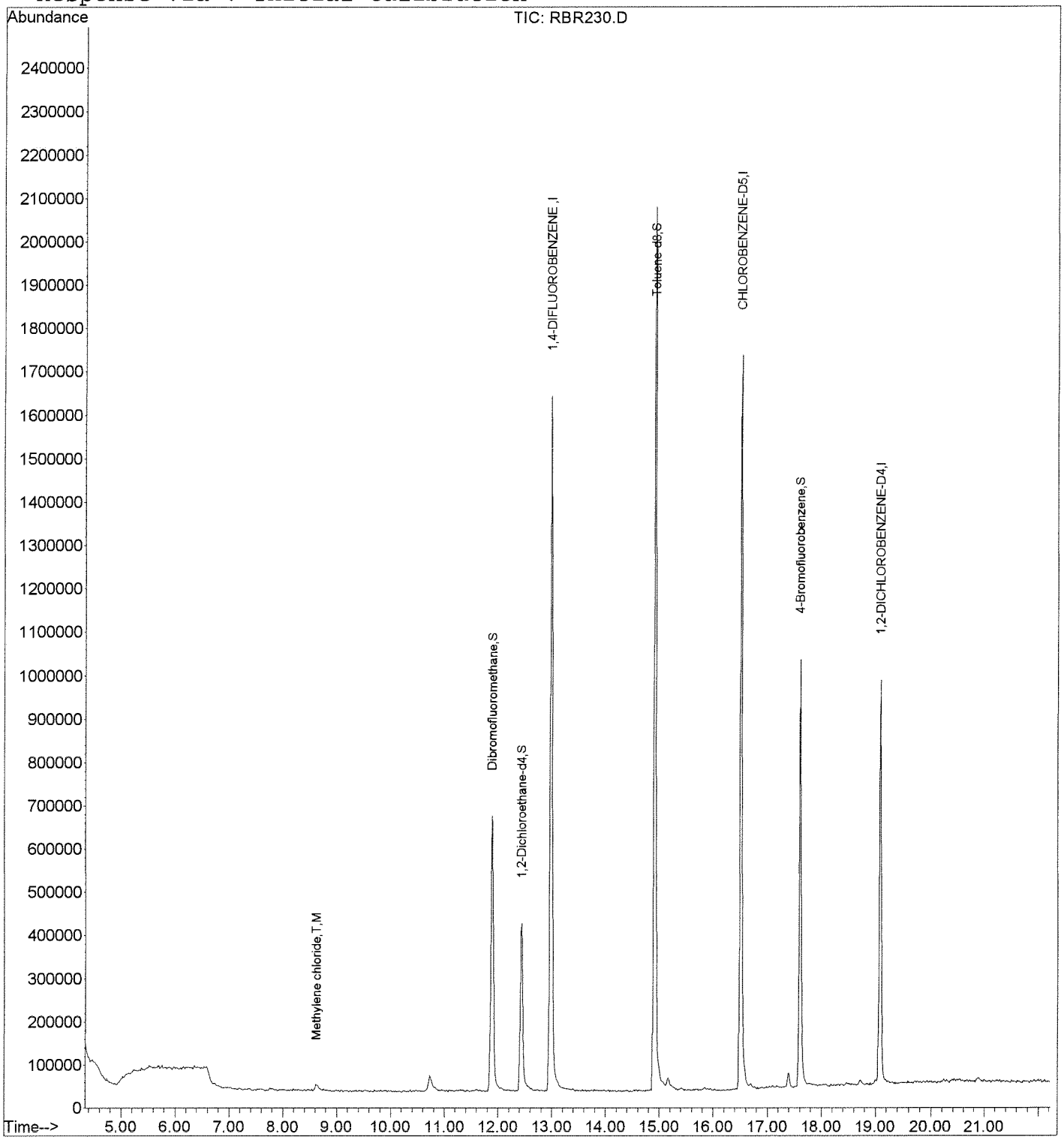
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.97	114	2082385	10.00	ug/l	0.02
54) CHLOROBENZENE-D5	16.50	117	1462816	10.00	ug/l	0.02
72) 1,2-DICHLOROBENZENE-D4	19.08	152	365154	10.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	11.89	111	715212	10.54	ug/l	0.03
Spiked Amount 10.000			Recovery	=	105.40%	
40) 1,2-Dichloroethane-d4	12.44	65	413534	9.32	ug/l	0.03
Spiked Amount 10.000			Recovery	=	93.20%	
55) Toluene-d8	14.91	98	2063186	10.09	ug/l	0.03
Spiked Amount 10.000			Recovery	=	100.90%	
75) 4-Bromofluorobenzene	17.59	95	538151	10.23	ug/l	0.02
Spiked Amount 10.000			Recovery	=	102.30%	
Target Compounds						Qvalue
18) Methylene chloride	8.62	49	27625	0.26	ug/l	96

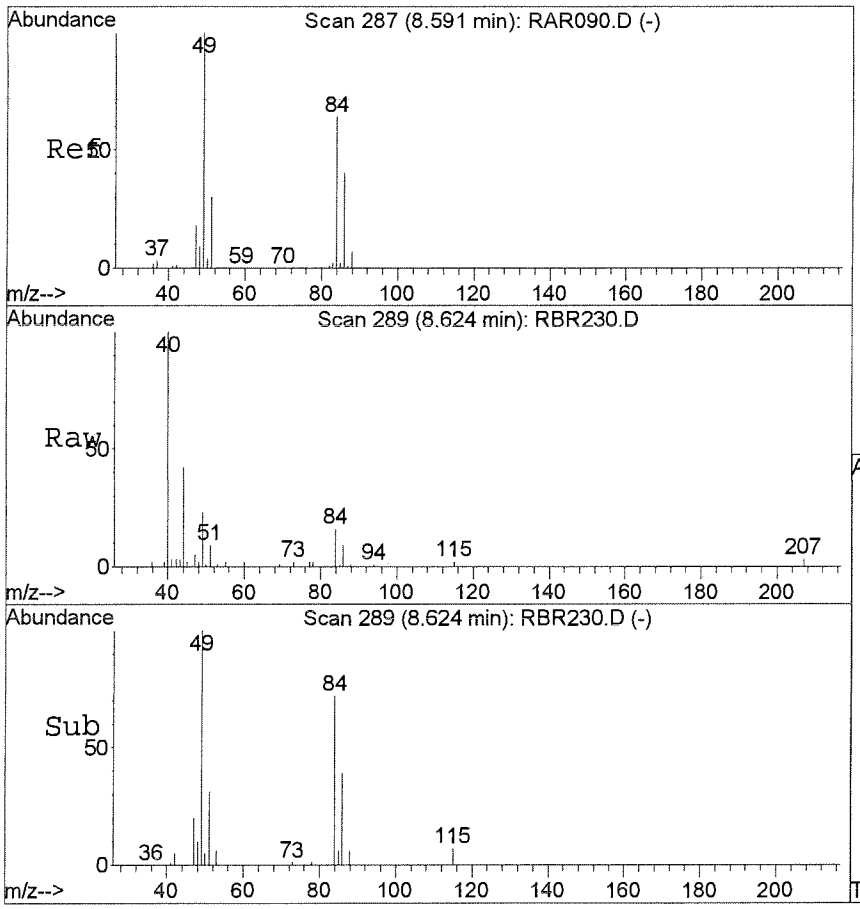
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR230.D Vial: 17
Acq On : 17 Feb 2016 8:10 pm Operator: IRagas/DNguy
Sample : 16B094-01N 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 16:07 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration

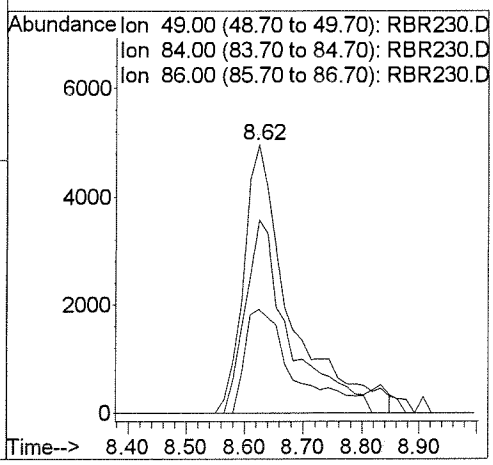




#18
Methylene chloride
Concen: 0.26 ug/l
RT: 8.62 min Scan# 289
Delta R.T. 0.03 min
Lab File: RBR230.D
Acq: 17 Feb 2016 8:10 pm

Tgt Ion: 49 Resp: 27625

Ion	Ratio	Lower	Upper
49	100		
84	68.6	34.1	94.1
86	41.1	11.0	71.0



METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/24/16 16:54
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/24/16 16:54
Lab Samp ID:	B094-03N	Dilution Factor:	10
Lab File ID:	RBW467	Matrix :	WATER
Ext Btch ID:	VO06B17	% Moisture :	NA
Calib. Ref.:	RBW406	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	10	1.0	2.0
2-BUTANONE	ND	100	20	40
CARBON TETRACHLORIDE	ND	10	1.0	2.0
CHLOROBENZENE	ND	10	1.0	2.0
CHLOROFORM	ND	10	1.0	2.0
1,4-DICHLOROBENZENE	ND	10	1.0	2.0
1,2-DICHLOROETHANE	ND	10	1.0	2.0
1,1-DICHLOROETHENE	ND	10	1.0	2.0
TETRACHLOROETHENE	ND	10	1.5	2.0
TRICHLOROETHENE	ND	10	1.0	2.0
VINYL CHLORIDE	ND	10	1.2	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98.6	100.0	98.6	70-120
4-BROMOFLUOROBENZENE	92.7	100.0	92.7	75-120
TOLUENE-D8	107	100.0	107	85-120
DIBROMOFLUOROMETHANE	105	100.0	105	85-115

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW467.D Vial: 15
Acq On : 24 Feb 2016 4:54 pm Operator: ODinh
Sample : 16B094-03N 2.5mL Inst : TO06
Misc : DF=10 Multiplr: 1.00
MS Integration Params: RTE.P (Foamer)
Quant Time: Feb 25 11:15 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.89	114	1784969	10.00	ug/l	-0.02
53) CHLOROBENZENE-D5	13.81	117	1496118	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.12	152	539958	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.39	111	534029	10.54	ug/l	-0.02
Spiked Amount 10.000			Recovery = 105.40%			
41) 1,2-Dichloroethane-d4	8.23	65	365059	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.60%			
54) Toluene-d8	11.36	98	2092551	10.68	ug/l	0.02
Spiked Amount 10.000			Recovery = 106.80%			
76) 4-Bromofluorobenzene	15.79	95	607965	9.27	ug/l	0.00
Spiked Amount 10.000			Recovery = 92.70%			
Target Compounds						Qvalue
17) Methylene chloride	4.53	49	10319	0.16	ug/l	93
18) Carbon disulfide	4.56	76	114807	0.53	ug/l	97
69) m-Xylene & p-Xylene	14.09	91	33541	0.19	ug/l	95
85) 1,2,4-Trimethylbenzene	16.93	105	18503	0.11	ug/l	81

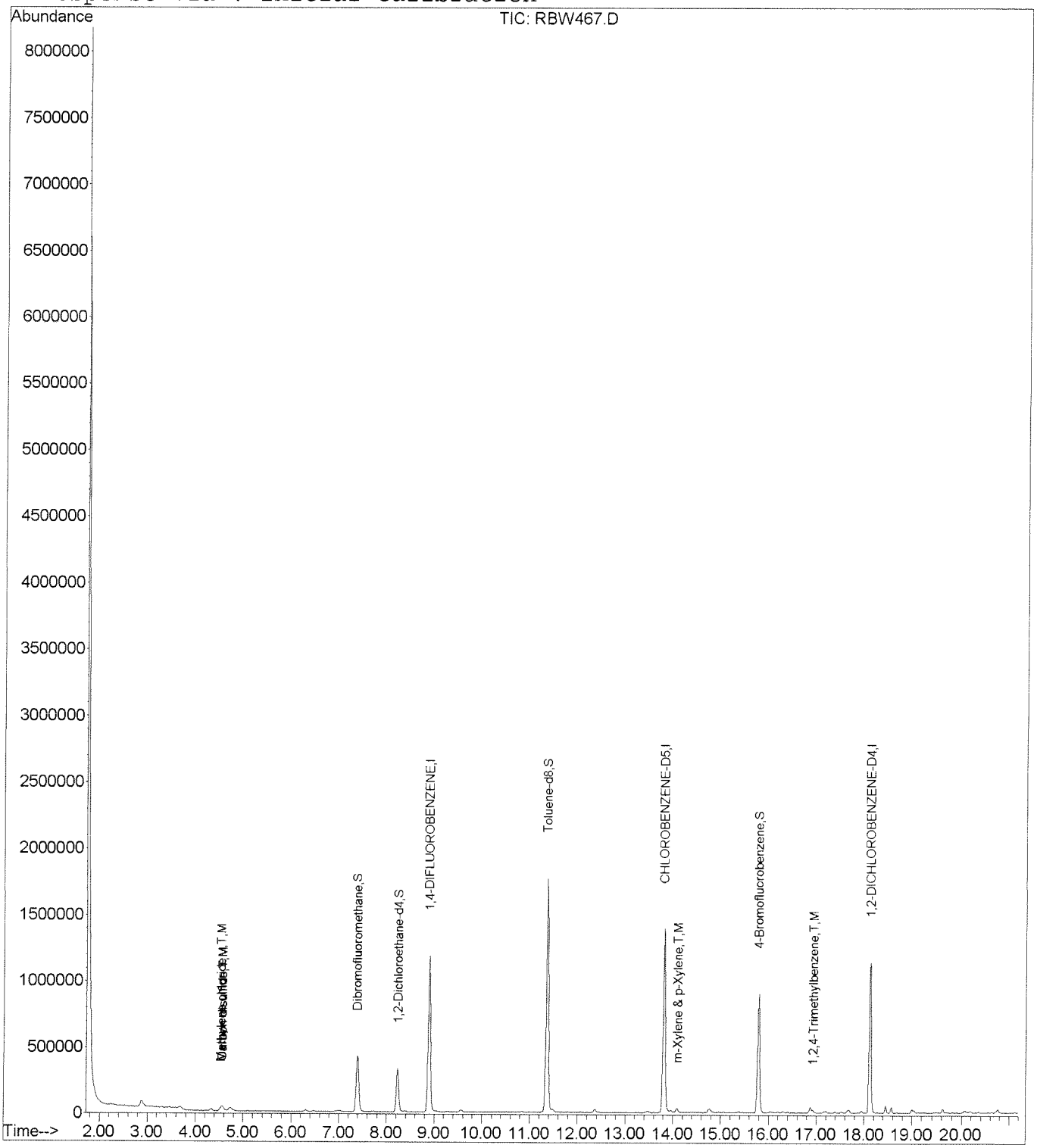
(#) = qualifier out of range (m) = manual integration

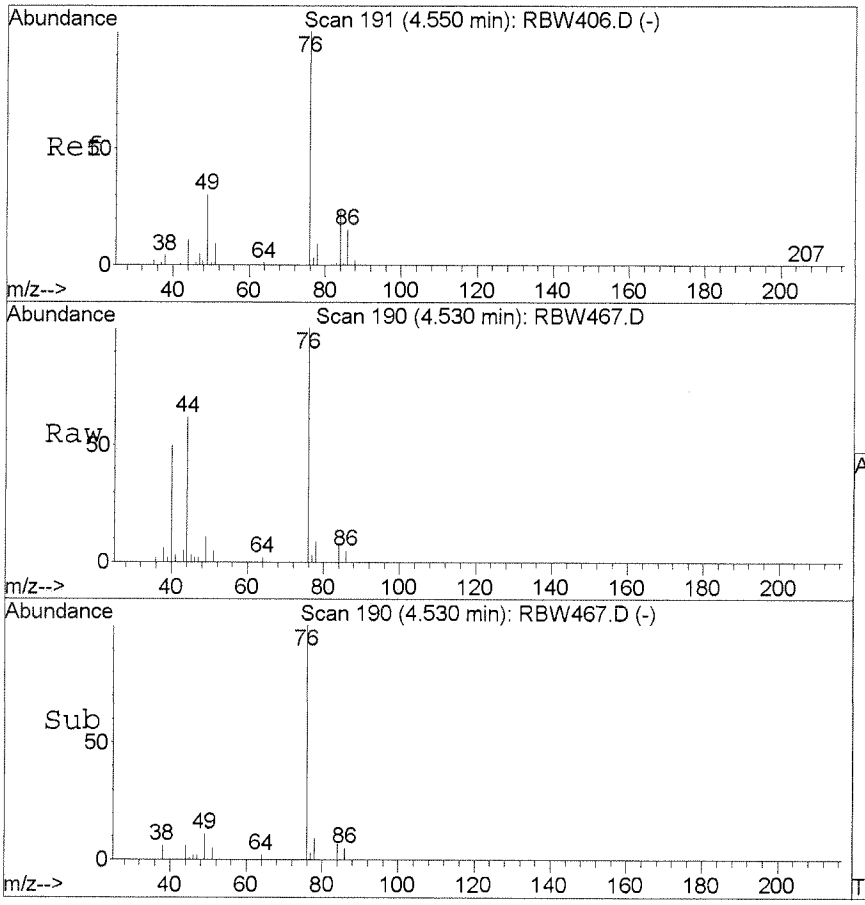
Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW467.D
Acq On : 24 Feb 2016 4:54 pm
Sample : 16B094-03N 2.5mL
Misc : DF=10
MS Integration Params: RTE.P
Quant Time: Feb 25 11:15 2016

Vial: 15
Operator: ODinh
Inst : TO06
Multiplr: 1.00
Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration

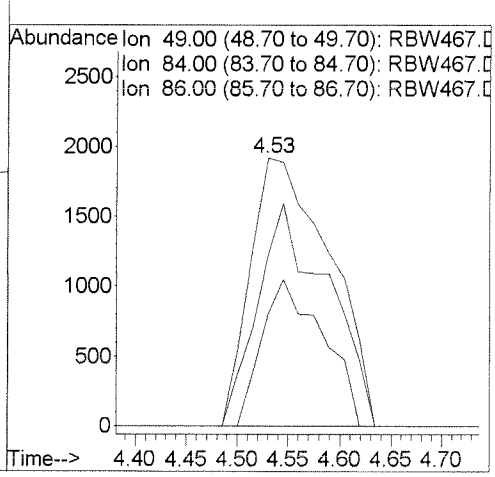


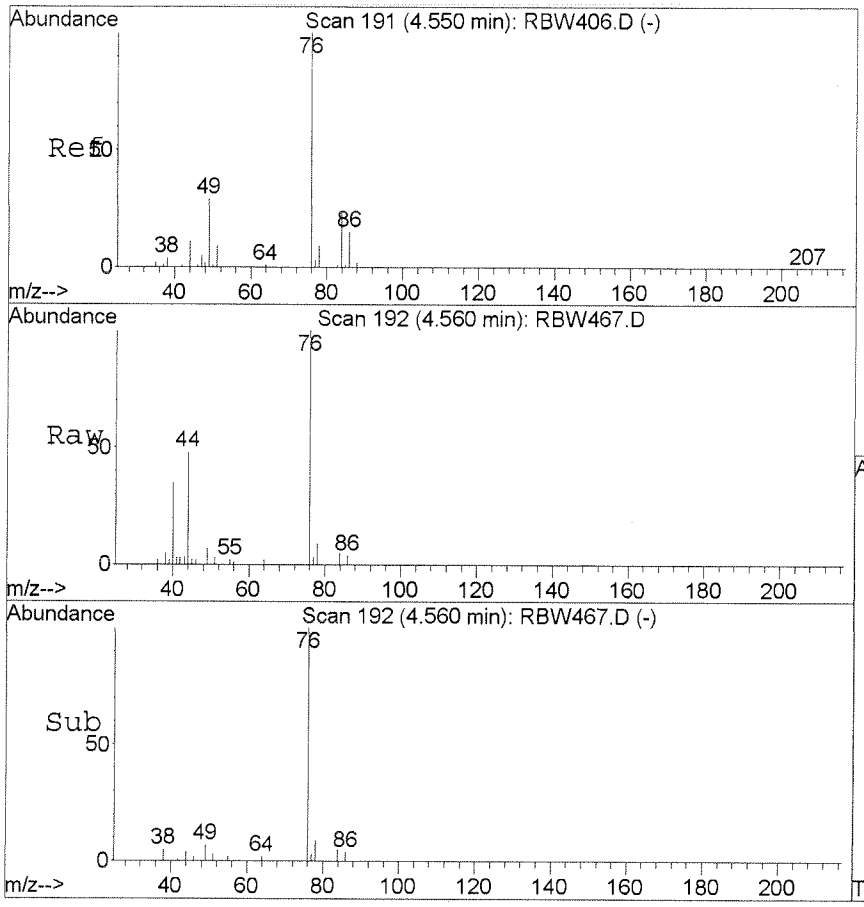


#17
Methylene chloride
Concen: 0.16 ug/l
RT: 4.53 min Scan# 190
Delta R.T. -0.02 min
Lab File: RBW467.D
Acq: 24 Feb 2016 4:54 pm

Tgt Ion: 49 Resp: 10319

Ion	Ratio	Lower	Upper
49	100		
84	73.0	47.2	107.2
86	42.2	19.8	79.8

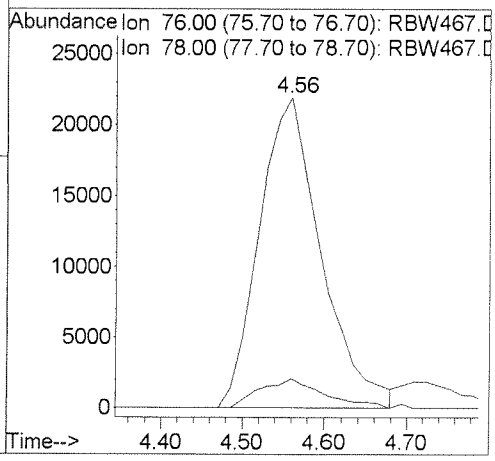


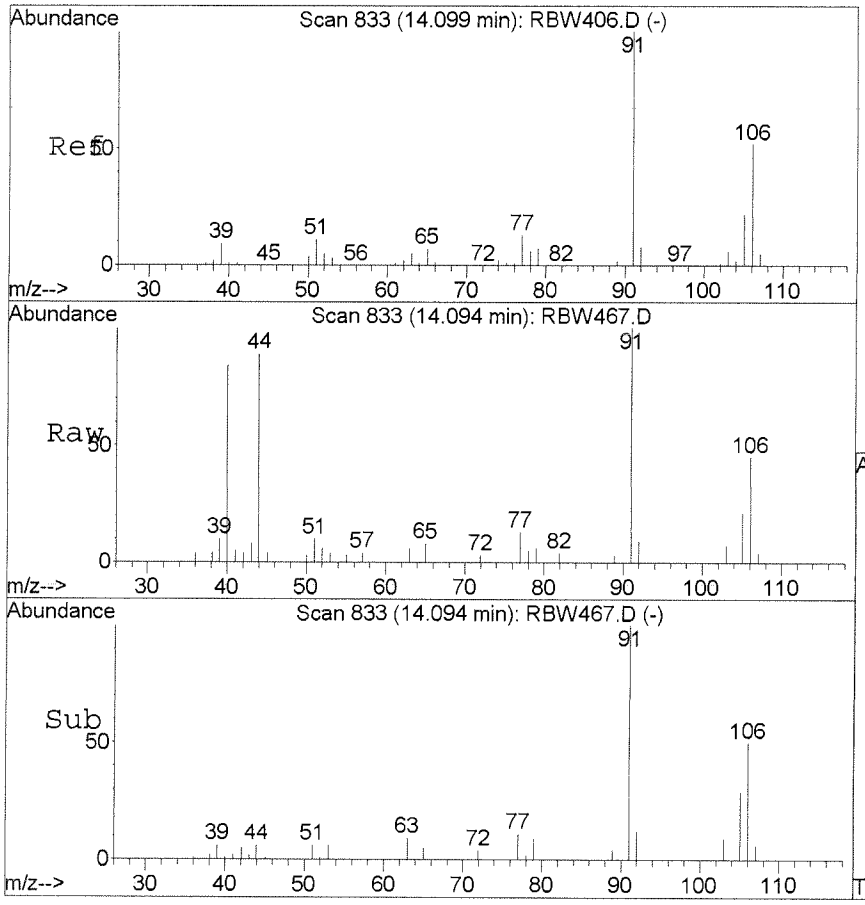


#18
Carbon disulfide
Concen: 0.53 ug/l
RT: 4.56 min Scan# 192
Delta R.T. 0.01 min
Lab File: RBW467.D
Acq: 24 Feb 2016 4:54 pm

Tgt Ion: 76 Resp: 114807

Ion	Ratio	Lower	Upper
76	100		
78	10.1	0.0	38.9

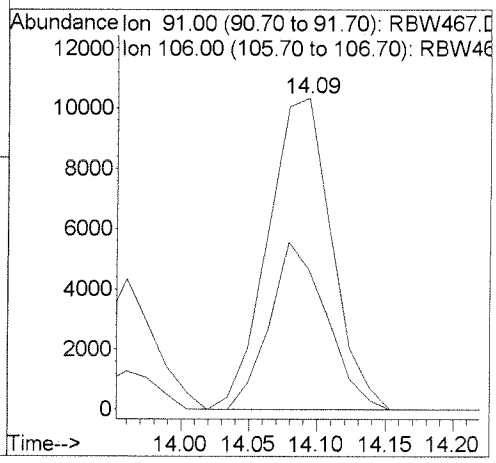


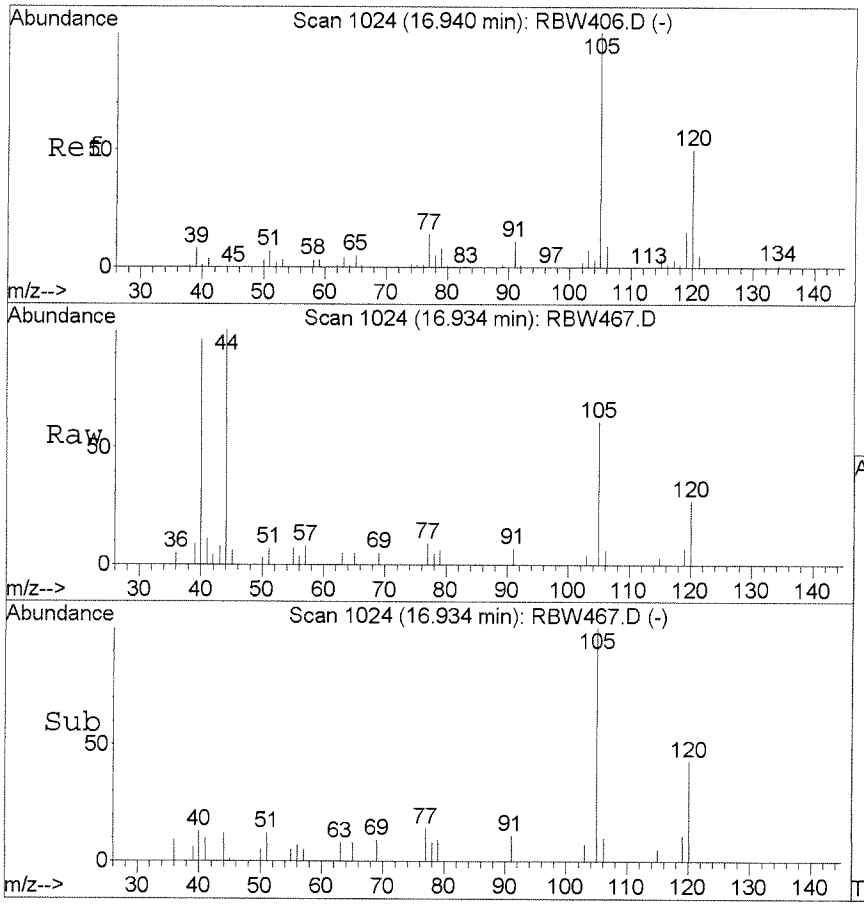


#69
m-Xylene & p-Xylene
Concen: 0.19 ug/l
RT: 14.09 min Scan# 833
Delta R.T. -0.01 min
Lab File: RBW467.D
Acq: 24 Feb 2016 4:54 pm

Tgt Ion: 91 Resp: 33541

Ion	Ratio	Lower	Upper
91	100		
106	48.0	21.4	81.4

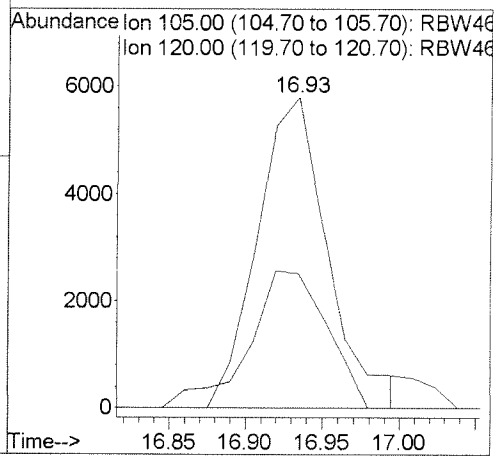




#85
1,2,4-Trimethylbenzene
Concen: 0.11 ug/l
RT: 16.93 min Scan# 1024
Delta R.T. -0.01 min
Lab File: RBW467.D
Acq: 24 Feb 2016 4:54 pm

Tgt Ion:105 Resp: 18503

Ion	Ratio	Lower	Upper
105	100		
120	45.6	29.6	89.6



QC SUMMARIES

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 15:00
Sample ID:	MBLK1W	Date Analyzed:	02/17/16 15:00
Lab Samp ID:	VOF3B10B	Dilution Factor:	1
Lab File ID:	RBR219	Matrix :	WATER
Ext Btch ID:	VOF3B10	% Moisture :	NA
Calib. Ref.:	RAR090	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.20	10.00	92.0	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.42	10.00	94.2	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VOF3B10B	VOF3B10X	VOF3B10Y		
LAB FILE ID:	RBR219	RBR220	RBR221		
DATE EXTRACTED:	02/17/1615:00	02/17/1615:28	02/17/1615:56	DATE COLLECTED:	NA
DATE ANALYZED:	02/17/1615:00	02/17/1615:28	02/17/1615:56	DATE RECEIVED:	02/17/16
PREP. BATCH:	VOF3B10	VOF3B10	VOF3B10		
CALIB. REF:	RAR090	RAR090	RAR090		

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 (%)
Benzene	ND	10.0	10.1	101	10.0	9.91	99	2	80-120	30
2-Butanone	ND	50.0	55.3	111	50.0	55.2	110	0	30-150	30
Carbon Tetrachloride	ND	10.0	11.0	110	10.0	10.7	107	3	65-140	30
Chlorobenzene	ND	10.0	10.5	105	10.0	10.4	104	1	80-120	30
Chloroform	ND	10.0	10.2	102	10.0	10.0	100	2	65-135	30
1,4-Dichlorobenzene	ND	10.0	9.74	97	10.0	9.59	96	2	75-125	30
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	10.2	102	2	70-130	30
1,1-Dichloroethene	ND	10.0	9.29	93	10.0	9.25	93	0	70-130	30
Tetrachloroethene	ND	10.0	10.3	103	10.0	10.3	103	0	45-150	30
Trichloroethene	ND	10.0	10.1	101	10.0	10.1	101	0	70-125	30
Vinyl Chloride	ND	10.0	11.4	114	10.0	12.2	122	6	50-145	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 (%)
1,2-Dichloroethane-d4	10.0	9.50	95	10.0	9.53	95	70-120
4-Bromofluorobenzene	10.0	9.69	97	10.0	9.65	96	75-120
Toluene-d8	10.0	9.40	94	10.0	9.60	96	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.4	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/24/16
Batch No.	: 16B094	Date Extracted:	02/24/16 12:54
Sample ID:	MBLK2W	Date Analyzed:	02/24/16 12:54
Lab Samp ID:	V006B17B	Dilution Factor:	1
Lab File ID:	RBW458	Matrix :	WATER
Ext Btch ID:	V006B17	% Moisture :	NA
Calib. Ref.:	RBW406	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.46	10.00	94.6	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.7	10.00	107	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V006B17B	V006B17L	V006B17C		
LAB FILE ID:	RBW458	RBW455	RBW456		
DATE EXTRACTED:	02/24/1612:54	02/24/1611:38	02/24/1612:04	DATE COLLECTED:	NA
DATE ANALYZED:	02/24/1612:54	02/24/1611:38	02/24/1612:04	DATE RECEIVED:	02/24/16
PREP. BATCH:	V006B17	V006B17	V006B17		
CALIB. REF:	RBW406	RBW406	RBW406		

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 (%)
Benzene	ND	10.0	10.9	109	10.0	10.4	104	5	80-120	30
2-Butanone	ND	50.0	48.3	97	50.0	45.4	91	6	30-150	30
Carbon Tetrachloride	ND	10.0	10.0	100	10.0	9.86	99	1	65-140	30
Chlorobenzene	ND	10.0	10.8	108	10.0	10.4	104	4	80-120	30
Chloroform	ND	10.0	10.4	104	10.0	9.83	98	6	65-135	30
1,4-Dichlorobenzene	ND	10.0	10.9	109	10.0	10.9	109	0	75-125	30
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	9.70	97	7	70-130	30
1,1-Dichloroethene	ND	10.0	10.8	108	10.0	10.6	106	2	70-130	30
Tetrachloroethene	ND	10.0	11.0	110	10.0	10.9	109	1	45-150	30
Trichloroethene	ND	10.0	10.7	107	10.0	10.6	106	1	70-125	30
Vinyl Chloride	ND	10.0	9.12	91	10.0	9.03	90	1	50-145	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 (%)
1,2-Dichloroethane-d4	10.0	9.77	98	10.0	9.49	95	70-120
4-Bromofluorobenzene	10.0	9.96	100	10.0	10.4	104	75-120
Toluene-d8	10.0	10.6	106	10.0	10.6	106	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.4	104	85-115

QC DATA

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR219.D Vial: 6
Acq On : 17 Feb 2016 3:00 pm Operator: IRagas/DNguye
Sample : VOF3B10B 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:51 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.99	114	1956774	10.00 ug/l	0.03
54) CHLOROBENZENE-D5	16.50	117	1454399	10.00 ug/l	0.02
72) 1,2-DICHLOROBENZENE-D4	19.08	152	369286	10.00 ug/l	0.02
System Monitoring Compounds					
34) Dibromofluoromethane	11.88	111	669528	10.50 ug/l	0.03
Spiked Amount 10.000			Recovery	= 105.00%	
40) 1,2-Dichloroethane-d4	12.43	65	383337	9.20 ug/l	0.03
Spiked Amount 10.000			Recovery	= 92.00%	
55) Toluene-d8	14.91	98	1915111	9.42 ug/l	0.03
Spiked Amount 10.000			Recovery	= 94.20%	
75) 4-Bromofluorobenzene	17.60	95	554869	10.43 ug/l	0.03
Spiked Amount 10.000			Recovery	= 104.30%	

Target Compounds Qvalue

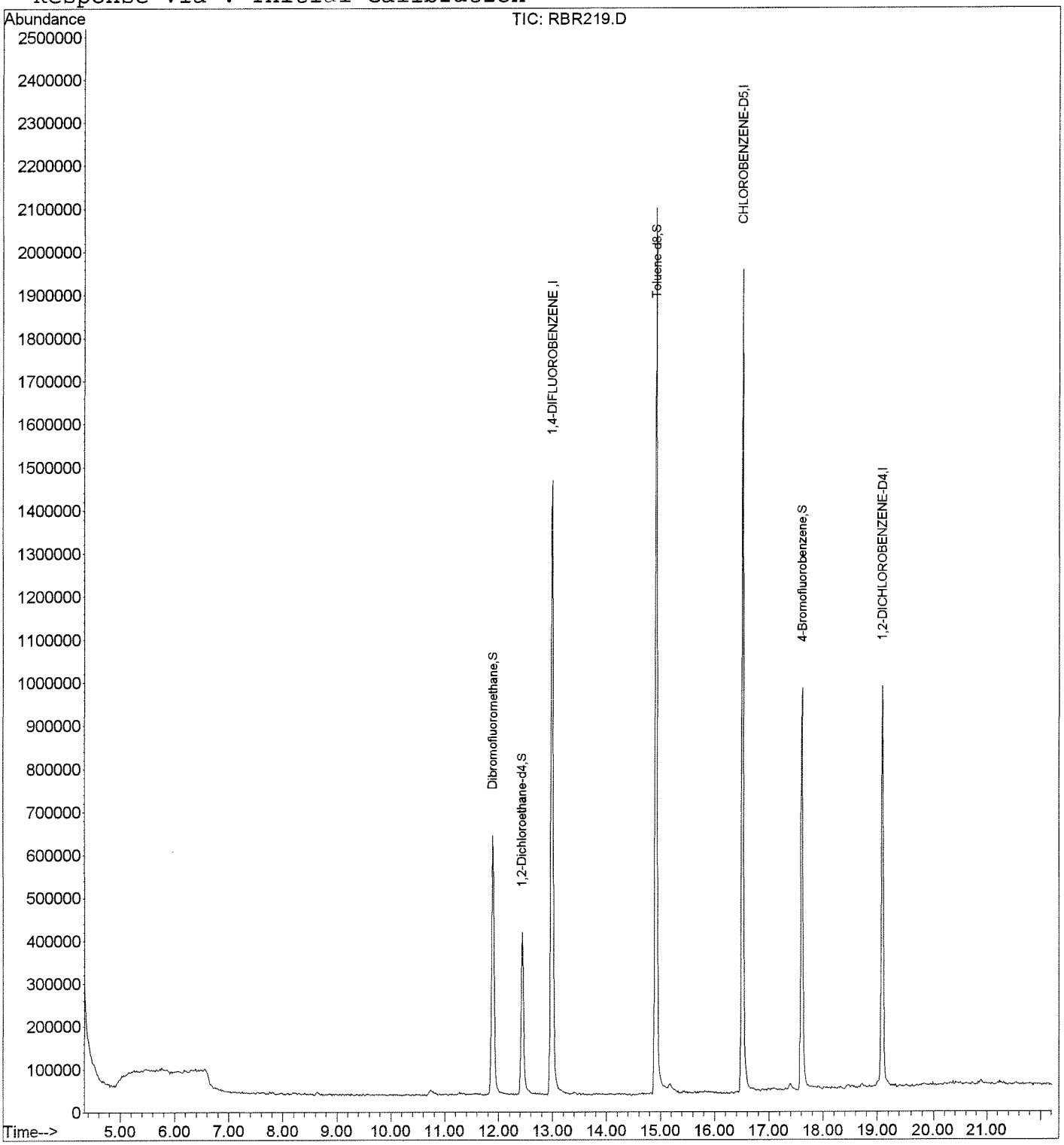
(#) = qualifier out of range (m) = manual integration
RBR219.D VOF3A19.M Thu Feb 18 15:51:39 2016 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR219.D
Acq On : 17 Feb 2016 3:00 pm
Sample : VOF3B10B 25mL
Misc : DF=1.0
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:51 2016

Vial: 6
Operator: IRagas/DNguy
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR220.D Vial: 7
Acq On : 17 Feb 2016 3:28 pm Operator: IRagas/DNguye
Sample : VOF3B10X 25mL Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:53 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.97	114	2185302	10.00	ug/l	0.02
54) CHLOROBENZENE-D5	16.50	117	1631032	10.00	ug/l	0.02
72) 1,2-DICHLOROBENZENE-D4	19.08	152	471043	10.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	11.88	111	744746	10.46	ug/l	0.03
Spiked Amount 10.000			Recovery	=	104.60%	
40) 1,2-Dichloroethane-d4	12.43	65	442084	9.50	ug/l	0.03
Spiked Amount 10.000			Recovery	=	95.00%	
55) Toluene-d8	14.91	98	2143473	9.40	ug/l	0.03
Spiked Amount 10.000			Recovery	=	94.00%	
75) 4-Bromofluorobenzene	17.59	95	657876	9.69	ug/l	0.02
Spiked Amount 10.000			Recovery	=	96.90%	
Target Compounds						Qvalue
3) Dichlorodifluoromethane	4.55	85	943072	10.23	ug/l	100
4) Chloromethane	4.99	50	1424847	11.66	ug/l	100
6) Vinyl chloride	5.24	62	1167582	11.42	ug/l	99
7) Bromomethane	5.98	94	688463	10.93	ug/l	99
8) Chloroethane	6.18	64	633664	10.60	ug/l	99
9) Dichlorofluoromethane	6.54	67	1564466	9.77	ug/l	100
10) Trichlorofluoromethane	6.63	101	1227667	12.25	ug/l	99
11) Acrolein	7.49	56	215796	85.97	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	7.59	151	424864	9.16	ug/l	100
13) 1,1-Dichloroethene	7.65	61	1273961	9.29	ug/l	99
14) Acetone	7.76	43	403197	52.63	ug/l	97
15) Iodomethane	8.04	142	1242074	9.88	ug/l	99
17) Carbon disulfide	8.19	76	2955429	10.91	ug/l	100
18) Methylene chloride	8.62	49	1054585	9.61	ug/l	96
19) tert-Butyl alcohol	8.71	59	134954	49.04	ug/l #	40
20) tert-Butyl methyl ether (M	9.02	73	1131871	11.56	ug/l	100
21) trans-1,2-Dichloroethene	9.13	61	1240674	9.85	ug/l	98
22) Acrylonitrile	9.13	53	532170	52.63	ug/l	95
23) Isopropyl ether (DIPE)	9.90	45	2824977	10.55	ug/l	98
24) 1,1-Dichloroethane	10.01	63	1513591	9.89	ug/l	99
25) Vinyl acetate	9.98	86	72835	11.03	ug/l #	1
26) tert-Butyl ethyl ether (ET	10.62	59	1835174	11.40	ug/l	99
27) 2,2-Dichloropropane	11.06	77	854247	11.99	ug/l	99
28) cis-1,2-Dichloroethene	11.09	96	845969	10.14	ug/l	99
29) 2-Butanone	11.06	43	713068	55.25	ug/l	98
31) Bromochloromethane	11.54	128	310007	10.49	ug/l	97
32) Tetrahydrofuran	11.59	42	96969	9.69	ug/l	96

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR220.D Vial: 7
Acq On : 17 Feb 2016 3:28 pm Operator: IRagas/DNguye
Sample : VOF3B10X 25mL Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:53 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
33)	Chloroform	11.60	83	1320243	10.24 ug/l		99
35)	1,1,1-Trichloroethane	11.91	97	1065861	10.97 ug/l		100
37)	1,1-Dichloropropene	12.15	110	411968	10.51 ug/l		99
38)	Carbon tetrachloride	12.17	119	975331	11.01 ug/l		99
42)	Benzene	12.49	78	2979987	10.13 ug/l		99
43)	1,2-Dichloroethane	12.54	62	625341	10.44 ug/l		99
44)	tert-Amyl methyl ether (TA	12.52	87	268335	11.65 ug/l	#	92
45)	Trichloroethene	13.39	130	813117	10.13 ug/l		98
47)	1,2-Dichloropropane	13.72	63	744306	10.29 ug/l		98
48)	1,4-Dioxane	13.86	88	54578	236.00 ug/l		98
49)	Dibromomethane	13.91	93	316459	10.88 ug/l		98
50)	Bromodichloromethane	14.06	83	894467	10.33 ug/l		100
51)	2-Chloroethyl vinyl ether	14.36	63	126231	7.49 ug/l		98
52)	cis-1,3-Dichloropropene	14.59	75	987773	10.52 ug/l		97
53)	4-Methyl-2-pentanone	14.71	43	1515860	50.34 ug/l		98
56)	Toluene	14.98	91	2905852	10.09 ug/l		100
57)	Ethyl methacrylate	15.22	69	406476	9.59 ug/l		97
58)	trans-1,3-Dichloropropene	15.24	75	688731	10.60 ug/l		98
59)	1,1,2-Trichloroethane	15.47	97	391842	11.12 ug/l		98
60)	Tetrachloroethene	15.62	164	529668	10.28 ug/l		98
61)	2-Hexanone	15.65	43	914460	49.67 ug/l		99
62)	1,3-Dichloropropane	15.67	76	698862	10.80 ug/l		99
63)	Dibromochloromethane	15.94	129	531114	10.94 ug/l		99
64)	1,2-Dibromoethane	16.08	107	404868	11.27 ug/l		99
65)	1-Chlorohexane	16.40	91	1160100	10.49 ug/l		100
66)	Chlorobenzene	16.53	112	1814400	10.52 ug/l		98
67)	Ethylbenzene	16.58	91	3145197	10.22 ug/l		100
68)	1,1,1,2-Tetrachloroethane	16.59	131	580870	10.75 ug/l		98
69)	m-Xylene & p-Xylene	16.67	91	4733084	20.92 ug/l		100
70)	o-Xylene	17.07	91	2297054	10.26 ug/l		99
71)	Styrene	17.08	104	1656793	9.83 ug/l		99
73)	Bromoform	17.37	173	243673	11.15 ug/l		99
74)	Isopropylbenzene	17.38	105	3044111	9.90 ug/l		100
76)	1,1,2,2-Tetrachloroethane	17.71	83	421430	10.70 ug/l		100
77)	trans-1,4-Dichloro-2-buten	17.74	53	87963	9.26 ug/l		99
78)	n-Propylbenzene	17.77	91	3378401	9.63 ug/l		100
79)	1,2,3-Trichloropropane	17.77	110	98236	10.52 ug/l		98
80)	Bromobenzene	17.78	156	521745	10.12 ug/l		95
81)	1,3,5-Trimethylbenzene	17.89	105	2176167	9.70 ug/l		100
82)	2-Chlorotoluene	17.92	91	2102324	9.76 ug/l		99
83)	4-Chlorotoluene	18.01	91	1799556	9.85 ug/l		100

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR220.D Vial: 7
Acq On : 17 Feb 2016 3:28 pm Operator: IRagas/DNguye
Sample : VOF3B10X 25mL Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:53 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

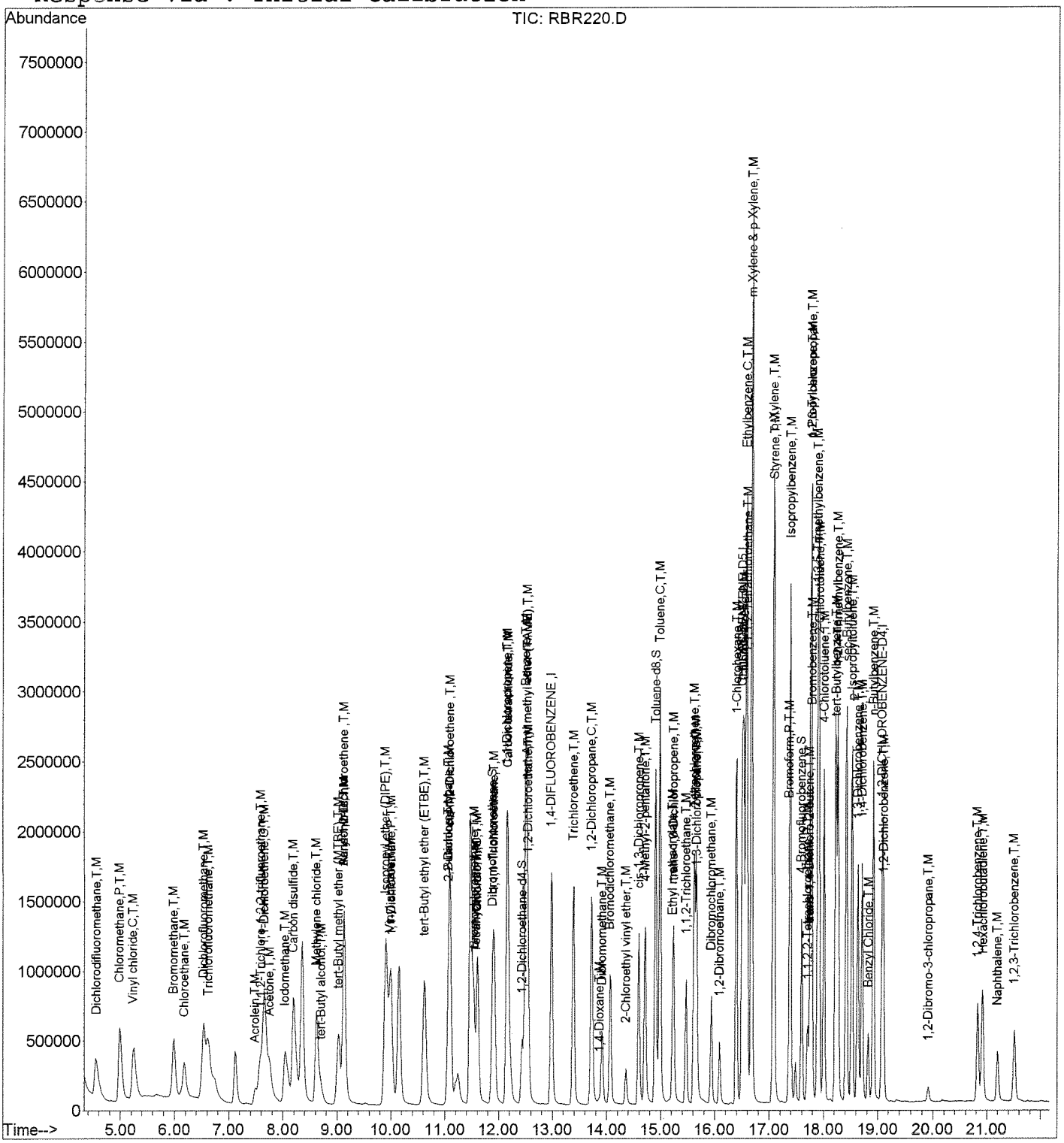
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
84)	tert-Butylbenzene	18.23	134	461374	9.84 ug/l	97
85)	1,2,4-Trimethylbenzene	18.26	105	1988701	9.57 ug/l	99
86)	sec-Butylbenzene	18.42	105	2984807	9.87 ug/l	99
87)	p-Isopropyltoluene	18.53	119	2212250	10.13 ug/l	100
88)	1,3-Dichlorobenzene	18.63	146	947570	9.89 ug/l	99
89)	1,4-Dichlorobenzene	18.71	146	893049	9.74 ug/l	99
90)	Benzyl Chloride	18.82	91	489774	10.36 ug/l	100
91)	n-Butylbenzene	18.91	91	1907113	9.80 ug/l	100
92)	1,2-Dichlorobenzene	19.11	146	771678	9.75 ug/l	97
93)	1,2-Dibromo-3-chloropropan	19.91	157	48209	11.25 ug/l	99
94)	1,2,4-Trichlorobenzene	20.82	180	369119	9.68 ug/l	99
95)	Hexachlorobutadiene	20.93	225	285415	10.53 ug/l	98
96)	Naphthalene	21.19	128	519073	8.76 ug/l	100
97)	1,2,3-Trichlorobenzene	21.51	180	290288	9.75 ug/l	100

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR220.D Vial: 7
Acq On : 17 Feb 2016 3:28 pm Operator: IRagas/DNguy
Sample : VOF3B10X 25mL Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:53 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR221.D Vial: 8
Acq On : 17 Feb 2016 3:56 pm Operator: IRagas/DNguye
Sample : VOF3B10Y 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:55 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.97	114	1799790	10.00	ug/l	0.02
54) CHLOROBENZENE-D5	16.50	117	1358510	10.00	ug/l	0.02
72) 1,2-DICHLOROBENZENE-D4	19.08	152	408241	10.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	11.88	111	609789	10.39	ug/l	0.03
Spiked Amount 10.000			Recovery	=	103.90%	
40) 1,2-Dichloroethane-d4	12.44	65	365318	9.53	ug/l	0.03
Spiked Amount 10.000			Recovery	=	95.30%	
55) Toluene-d8	14.91	98	1821722	9.60	ug/l	0.03
Spiked Amount 10.000			Recovery	=	96.00%	
75) 4-Bromofluorobenzene	17.59	95	567544	9.65	ug/l	0.02
Spiked Amount 10.000			Recovery	=	96.50%	
Target Compounds						Qvalue
3) Dichlorodifluoromethane	4.54	85	823817	10.85	ug/l	99
4) Chloromethane	4.99	50	1257492	12.49	ug/l	99
6) Vinyl chloride	5.24	62	1025128	12.17	ug/l	98
7) Bromomethane	5.99	94	600283	11.57	ug/l	98
8) Chloroethane	6.18	64	534983	10.86	ug/l	100
9) Dichlorofluoromethane	6.54	67	1344869	10.20	ug/l	99
10) Trichlorofluoromethane	6.63	101	1037414	12.57	ug/l	99
11) Acrolein	7.49	56	178493	86.35	ug/l	95
12) 1,1,2-Trichloro-1,2,2-trif	7.59	151	360127	9.43	ug/l	99
13) 1,1-Dichloroethene	7.65	61	1044780	9.25	ug/l	97
14) Acetone	7.76	43	326006	51.67	ug/l	93
15) Iodomethane	8.04	142	1031771	9.97	ug/l	98
17) Carbon disulfide	8.19	76	2551037	11.43	ug/l	100
18) Methylene chloride	8.62	49	861191	9.53	ug/l	96
19) tert-Butyl alcohol	8.71	59	111892	49.37	ug/l #	55
20) tert-Butyl methyl ether (M	9.02	73	892491	11.07	ug/l	99
21) trans-1,2-Dichloroethene	9.13	61	998080	9.63	ug/l	98
22) Acrylonitrile	9.13	53	455777	54.73	ug/l	100
23) Isopropyl ether (DIPE)	9.90	45	2256433	10.23	ug/l	98
24) 1,1-Dichloroethane	9.99	63	1256764	9.98	ug/l	99
25) Vinyl acetate	9.99	86	58069	10.68	ug/l #	1
26) tert-Butyl ethyl ether (ET	10.62	59	1500347	11.32	ug/l	99
27) 2,2-Dichloropropane	11.07	77	718405	12.24	ug/l	99
28) cis-1,2-Dichloroethene	11.09	96	687993	10.01	ug/l	99
29) 2-Butanone	11.08	43	586771	55.20	ug/l	99
31) Bromochloromethane	11.54	128	255767	10.51	ug/l	95
32) Tetrahydrofuran	11.59	42	76899	9.33	ug/l	94

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR221.D Vial: 8
Acq On : 17 Feb 2016 3:56 pm Operator: IRagas/DNguye
Sample : VOF3B10Y 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:55 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
33)	Chloroform	11.60	83	1067181	10.05 ug/l		99
35)	1,1,1-Trichloroethane	11.91	97	883092	11.04 ug/l		100
37)	1,1-Dichloropropene	12.15	110	331372	10.26 ug/l		99
38)	Carbon tetrachloride	12.17	119	781040	10.71 ug/l		99
42)	Benzene	12.50	78	2401300	9.91 ug/l		99
43)	1,2-Dichloroethane	12.54	62	504912	10.23 ug/l		100
44)	tert-Amyl methyl ether (TA	12.52	87	217035	11.44 ug/l	#	90
45)	Trichloroethene	13.39	130	670034	10.13 ug/l		98
47)	1,2-Dichloropropane	13.72	63	621327	10.43 ug/l		97
48)	1,4-Dioxane	13.87	88	44326	232.72 ug/l		100
49)	Dibromomethane	13.91	93	259870	10.84 ug/l		98
50)	Bromodichloromethane	14.06	83	734148	10.29 ug/l		100
51)	2-Chloroethyl vinyl ether	14.36	63	106734	7.69 ug/l		97
52)	cis-1,3-Dichloropropene	14.60	75	806926	10.43 ug/l		97
53)	4-Methyl-2-pentanone	14.71	43	1286420	51.87 ug/l		98
56)	Toluene	14.98	91	2390663	9.96 ug/l		100
57)	Ethyl methacrylate	15.22	69	343449	9.73 ug/l		96
58)	trans-1,3-Dichloropropene	15.24	75	577638	10.68 ug/l		95
59)	1,1,2-Trichloroethane	15.47	97	328666	11.19 ug/l		99
60)	Tetrachloroethene	15.62	164	443312	10.33 ug/l		98
61)	2-Hexanone	15.65	43	789060	51.45 ug/l		98
62)	1,3-Dichloropropane	15.67	76	583022	10.82 ug/l		100
63)	Dibromochloromethane	15.94	129	450864	11.15 ug/l		99
64)	1,2-Dibromoethane	16.09	107	336086	11.23 ug/l		97
65)	1-Chlorohexane	16.40	91	979719	10.64 ug/l		99
66)	Chlorobenzene	16.53	112	1491389	10.38 ug/l		97
67)	Ethylbenzene	16.58	91	2595276	10.13 ug/l		100
68)	1,1,1,2-Tetrachloroethane	16.59	131	479953	10.66 ug/l		98
69)	m-Xylene & p-Xylene	16.67	91	3951384	20.96 ug/l		99
70)	o-Xylene	17.07	91	1921019	10.30 ug/l		98
71)	Styrene	17.08	104	1378728	9.82 ug/l		99
73)	Bromoform	17.37	173	205740	10.86 ug/l		99
74)	Isopropylbenzene	17.38	105	2566161	9.63 ug/l		100
76)	1,1,2,2-Tetrachloroethane	17.69	83	359548	10.53 ug/l		99
77)	trans-1,4-Dichloro-2-buten	17.74	53	73754	8.95 ug/l		97
78)	n-Propylbenzene	17.77	91	3013481	9.91 ug/l		100
79)	1,2,3-Trichloropropane	17.77	110	87572	10.82 ug/l		100
80)	Bromobenzene	17.78	156	459977	10.30 ug/l		97
81)	1,3,5-Trimethylbenzene	17.89	105	1862856	9.58 ug/l		100
82)	2-Chlorotoluene	17.92	91	1806244	9.67 ug/l		99
83)	4-Chlorotoluene	18.01	91	1585452	10.01 ug/l		99

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR221.D Vial: 8
Acq On : 17 Feb 2016 3:56 pm Operator: IRagas/DNguye
Sample : VOF3B10Y 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:55 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

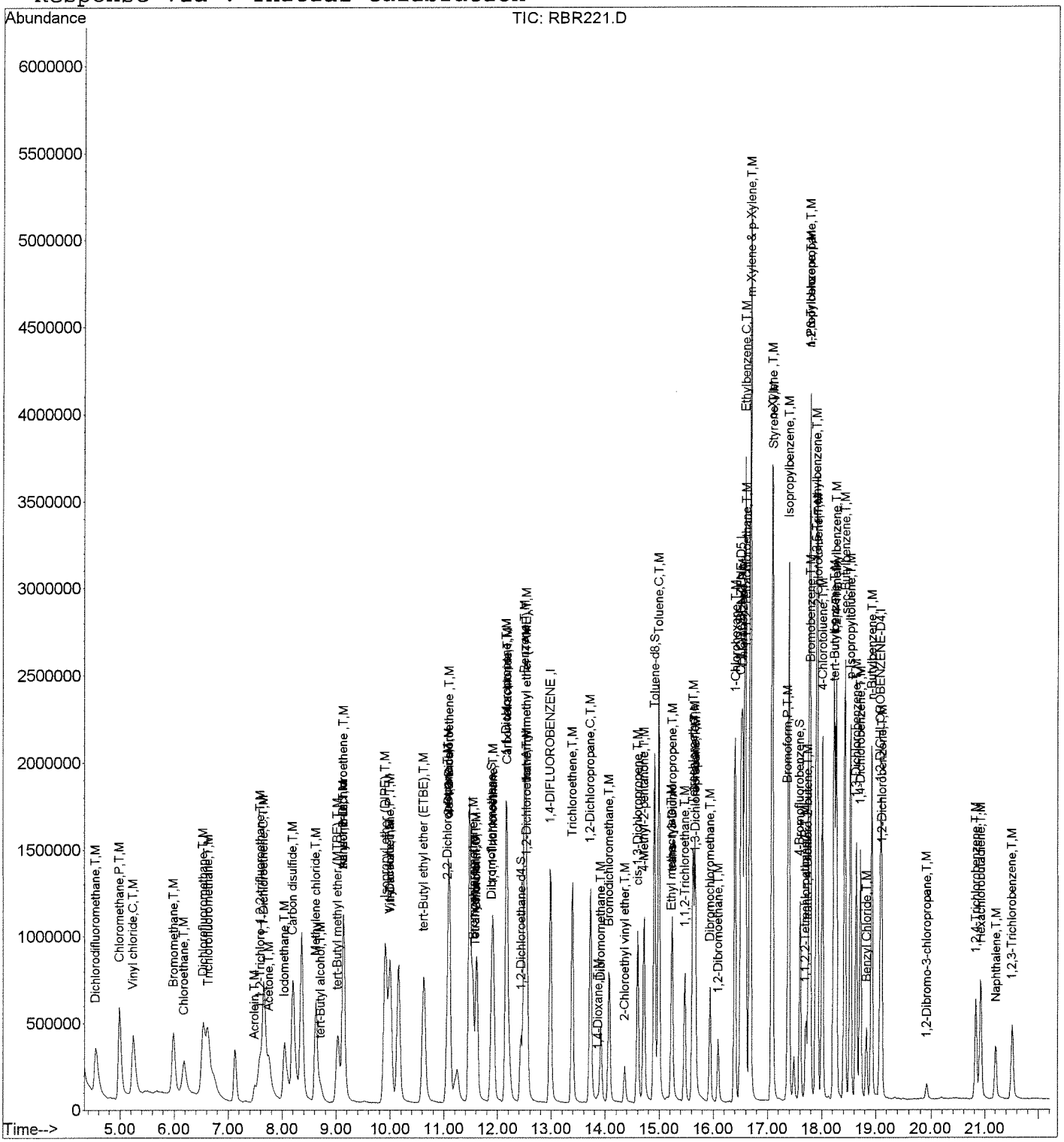
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
84)	tert-Butylbenzene	18.23	134	408142	10.04 ug/l	95
85)	1,2,4-Trimethylbenzene	18.26	105	1735304	9.63 ug/l	98
86)	sec-Butylbenzene	18.42	105	2619055	9.99 ug/l	100
87)	p-Isopropyltoluene	18.53	119	1870129	9.88 ug/l	100
88)	1,3-Dichlorobenzene	18.63	146	822353	9.90 ug/l	99
89)	1,4-Dichlorobenzene	18.71	146	762222	9.59 ug/l	98
90)	Benzyl Chloride	18.83	91	420313	10.26 ug/l	99
91)	n-Butylbenzene	18.92	91	1602740	9.50 ug/l	99
92)	1,2-Dichlorobenzene	19.11	146	675237	9.84 ug/l	99
93)	1,2-Dibromo-3-chloropropan	19.91	157	41015	11.04 ug/l	97
94)	1,2,4-Trichlorobenzene	20.82	180	305095	9.23 ug/l	99
95)	Hexachlorobutadiene	20.93	225	242316	10.31 ug/l	99
96)	Naphthalene	21.21	128	462653	9.00 ug/l	99
97)	1,2,3-Trichlorobenzene	21.51	180	248780	9.64 ug/l	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR221.D Vial: 8
Acq On : 17 Feb 2016 3:56 pm Operator: IRagas/DNguy
Sample : VOF3B10Y 25mL Inst : F3
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:55 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW458.D Vial: 6
Acq On : 24 Feb 2016 12:54 pm Operator: ODinh
Sample : VO06B17B 25mL Inst : TO06
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 14:51 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.89	114	1972770	10.00	ug/l	-0.02
53) CHLOROBENZENE-D5	13.80	117	1598963	10.00	ug/l	-0.02
73) 1,2-DICHLOROBENZENE-D4	18.11	152	513315	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	7.39	111	578372	10.33	ug/l	-0.02
Spiked Amount 10.000			Recovery = 103.30%			
41) 1,2-Dichloroethane-d4	8.22	65	387057	9.46	ug/l	-0.02
Spiked Amount 10.000			Recovery = 94.60%			
54) Toluene-d8	11.34	98	2246818	10.73	ug/l	-0.03
Spiked Amount 10.000			Recovery = 107.30%			
76) 4-Bromofluorobenzene	15.77	95	626591	10.05	ug/l	-0.02
Spiked Amount 10.000			Recovery = 100.50%			

Target Compounds Qvalue

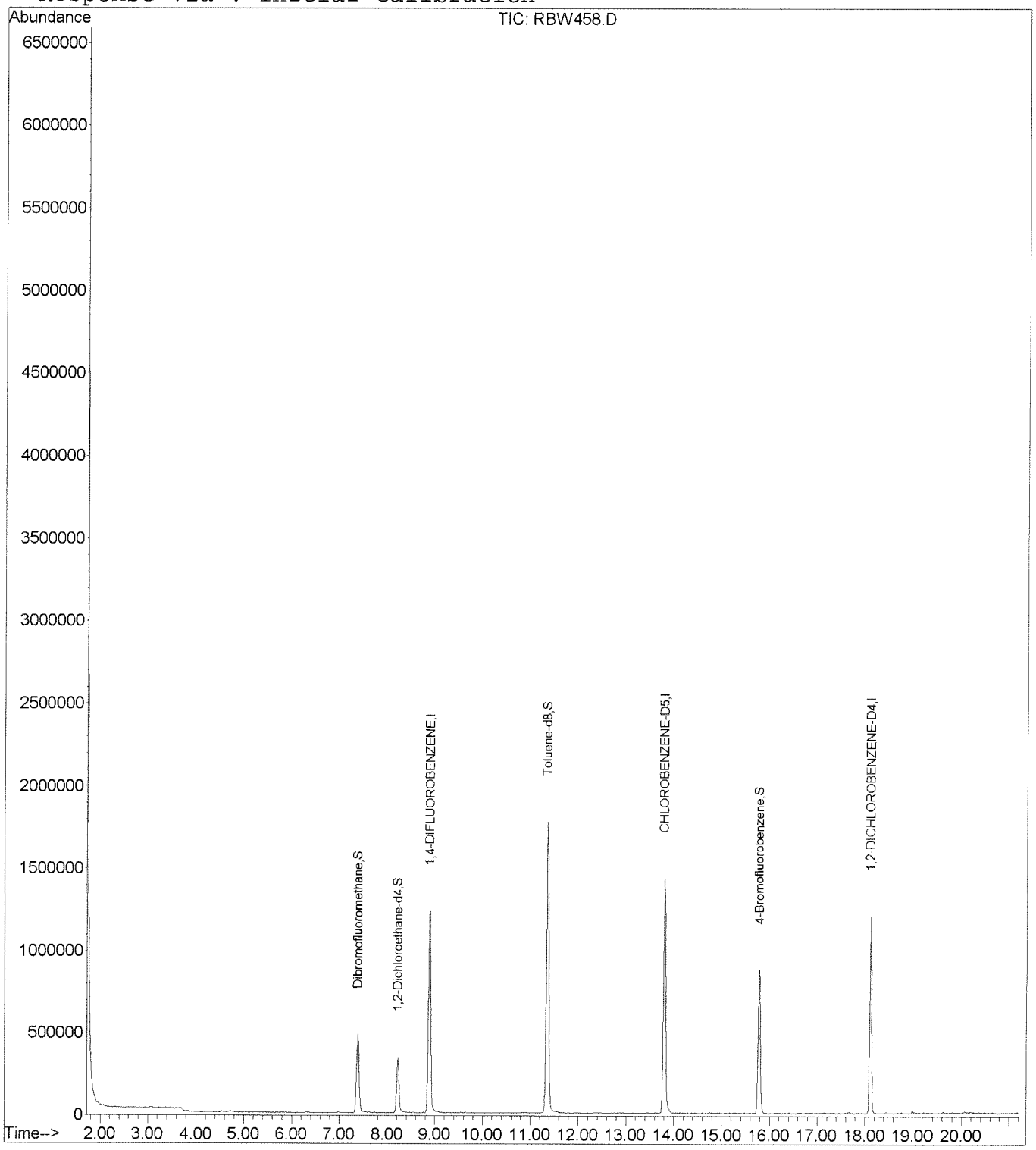
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW458.D
Acq On : 24 Feb 2016 12:54 pm
Sample : VO06B17B 25mL
Misc : BLANK
MS Integration Params: RTE.P
Quant Time: Feb 24 14:51 2016

Vial: 6
Operator: ODinh
Inst : TO06
Multiplr: 1.00
Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW455.D
Acq On : 24 Feb 2016 11:38 am
Sample : VO06B17L
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: RTE.P
Quant Time: Feb 24 11:59 2016

Vial: 3
Operator: ODinh
Inst : TO06
Multiplr: 1.00
Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.89	114	1711761	10.00	ug/l	-0.02
53) CHLOROBENZENE-D5	13.80	117	1460178	10.00	ug/l	-0.02
73) 1,2-DICHLOROBENZENE-D4	18.11	152	509366	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	7.39	111	511742	10.53	ug/l	-0.02
Spiked Amount 10.000			Recovery = 105.30%			
41) 1,2-Dichloroethane-d4	8.22	65	346721	9.77	ug/l	-0.02
Spiked Amount 10.000			Recovery = 97.70%			
54) Toluene-d8	11.36	98	2028136	10.61	ug/l	-0.02
Spiked Amount 10.000			Recovery = 106.10%			
76) 4-Bromofluorobenzene	15.77	95	616395	9.96	ug/l	-0.02
Spiked Amount 10.000			Recovery = 99.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.79	85	550683	8.24	ug/l	98
3) Chloromethane	2.03	50	715825	9.86	ug/l	99
4) Vinyl chloride	2.15	62	608772	9.12	ug/l	98
5) Bromomethane	2.66	94	440225	10.01	ug/l	99
6) Chloroethane	2.76	64	385411	9.76	ug/l	98
7) Dichlorofluoromethane	2.79	67	1103028	10.62	ug/l	99
8) Trichlorofluoromethane	3.06	101	631365	9.40	ug/l	100
9) Acrolein	3.58	56	133705	48.81	ug/l	99
10) 1,1,2-Trichloro-1,2,2-trif	3.62	151	364774	10.97	ug/l	99
11) Acetone	3.67	43	231718	54.66	ug/l	97
12) 1,1-Dichloroethene	3.85	61	955953	10.81	ug/l	98
13) tert-Butyl alcohol	3.95	59	89041	51.78	ug/l	98
15) Methyl acetate	4.32	43	175694	10.24	ug/l	96
16) Iodomethane	4.28	142	955162	11.10	ug/l	99
17) Methylene chloride	4.53	49	671236	10.68	ug/l	99
18) Carbon disulfide	4.53	76	1854351	8.94	ug/l	99
19) Acrylonitrile	4.72	53	370513	50.54	ug/l	99
20) tert-Butyl methyl ether (M	4.77	73	778007	9.89	ug/l	99
21) trans-1,2-Dichloroethene	4.98	61	865745	10.80	ug/l	100
22) Isopropyl ether (DIPE)	5.54	45	1862460	11.04	ug/l	99
23) Vinyl acetate	5.73	43	591619	11.84	ug/l	98
24) 1,1-Dichloroethane	5.71	63	1045450	10.69	ug/l	100
25) 2-Butanol	6.12	45	81857	55.20	ug/l	98
26) tert-Butyl ethyl ether (ET	6.26	59	1267825	10.05	ug/l	99
27) 2-Butanone	6.45	72	105125	48.26	ug/l	89
28) 2,2-Dichloropropane	6.67	77	464715	10.19	ug/l	100
29) cis-1,2-Dichloroethene	6.75	96	624912	10.53	ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW455.D Vial: 3
Acq On : 24 Feb 2016 11:38 am Operator: ODinh
Sample : VO06B17L Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:59 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.01	83	903765	10.40 ug/l	99
32)	Bromochloromethane	7.28	49	411133	10.80 ug/l	100
33)	Tetrahydrofuran	7.34	42	57436	10.23 ug/l	95
35)	1,1,1-Trichloroethane	7.68	97	639011	9.83 ug/l	99
36)	Cyclohexane	7.68	56	1154983	10.66 ug/l	100
38)	1,1-Dichloropropene	7.95	110	297304	10.32 ug/l	99
39)	Carbon tetrachloride	8.10	119	596764	10.00 ug/l	98
40)	tert-Amyl methyl ether (TA	8.17	87	203303	9.33 ug/l	96
42)	1,2-Dichloroethane	8.38	62	430739	10.45 ug/l	99
43)	Benzene	8.38	78	2388825	10.91 ug/l	100
44)	Trichloroethene	9.39	130	645063	10.71 ug/l	96
45)	Methylcyclohexane	9.48	83	1040117	10.78 ug/l	99
46)	1,2-Dichloropropane	9.69	63	564059	10.45 ug/l	98
47)	1,4-Dioxane	10.12	88	41749	194.97 ug/l	94
48)	Bromodichloromethane	10.08	83	643484	10.67 ug/l	97
49)	Dibromomethane	10.15	93	233134	10.62 ug/l	98
50)	2-Chloroethyl vinyl ether	10.61	63	94509	7.92 ug/l	98
51)	4-Methyl-2-pentanone	10.64	43	1186087	53.20 ug/l	99
52)	cis-1,3-Dichloropropene	10.97	75	820959	10.96 ug/l	99
55)	Toluene	11.48	91	2383053	10.38 ug/l	100
56)	Ethyl methacrylate	11.79	69	375755	10.56 ug/l	99
57)	trans-1,3-Dichloropropene	11.79	75	557882	10.22 ug/l	99
58)	1,1,2-Trichloroethane	12.04	97	299696	10.01 ug/l	99
59)	2-Hexanone	12.07	43	720833	54.03 ug/l	98
60)	1,3-Dichloropropane	12.44	76	578835	10.67 ug/l	98
61)	Tetrachloroethene	12.53	164	492052	11.03 ug/l	99
62)	Dibromochloromethane	12.86	129	380408	10.34 ug/l	98
64)	1,2-Dibromoethane	13.19	107	296436	10.31 ug/l	99
65)	1-Chlorohexane	13.45	91	1106657	11.37 ug/l	100
66)	Chlorobenzene	13.86	112	1456403	10.83 ug/l	99
67)	1,1,1,2-Tetrachloroethane	13.93	131	450506	10.33 ug/l	99
68)	Ethylbenzene	13.95	91	2708907	11.15 ug/l	98
69)	m-Xylene & p-Xylene	14.08	91	4069458	23.09 ug/l	99
70)	o-Xylene	14.78	91	2043719	11.22 ug/l	98
71)	Styrene	14.84	104	1533887	10.89 ug/l	100
72)	Isopropylbenzene	15.37	105	2439524	11.41 ug/l	99
74)	Bromoform	15.39	173	187466	10.28 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.66	83	324772	10.24 ug/l	100
77)	1,2,3-Trichloropropane	15.89	110	80038	9.98 ug/l	94
78)	trans-1,4-Dichloro-2-buten	16.01	53	82066	8.99 ug/l	96
79)	n-Propylbenzene	16.01	91	3212197	10.77 ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW455.D Vial: 3
Acq On : 24 Feb 2016 11:38 am Operator: ODinh
Sample : VO06B17L Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:59 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

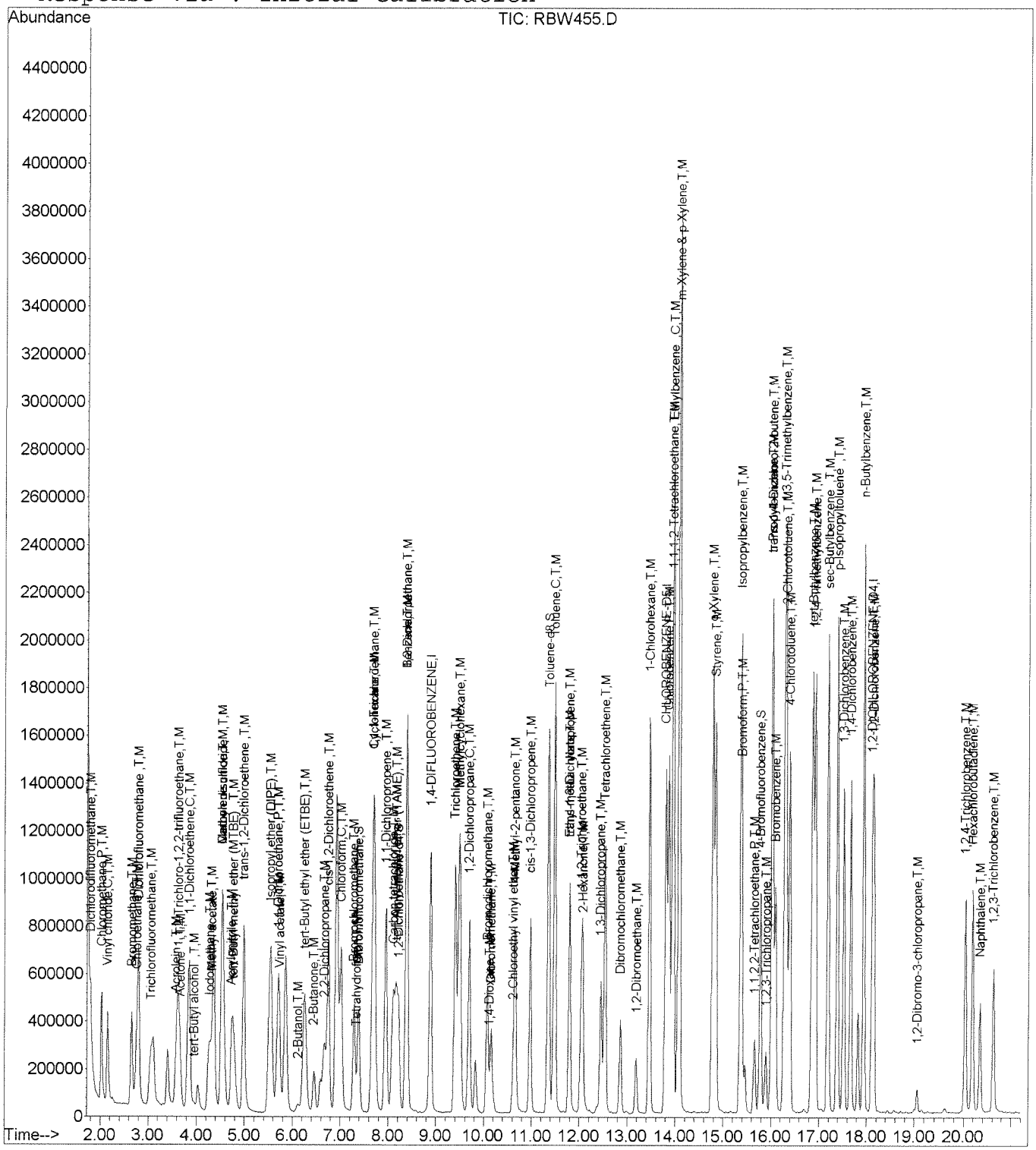
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.09	156	485382	10.39 ug/l	97
81)	1,3,5-Trimethylbenzene	16.28	105	1835307	10.63 ug/l	99
82)	2-Chlorotoluene	16.31	91	1820982	10.18 ug/l	95
83)	4-Chlorotoluene	16.38	91	1695743	11.51 ug/l	94
84)	tert-Butylbenzene	16.86	134	489983	10.56 ug/l	97
85)	1,2,4-Trimethylbenzene	16.92	105	1837646	11.06 ug/l	99
86)	sec-Butylbenzene	17.19	105	2605444	11.10 ug/l	98
87)	p-Isopropyltoluene	17.38	119	2062733	10.95 ug/l	99
88)	1,3-Dichlorobenzene	17.51	146	956927	10.59 ug/l	99
89)	1,4-Dichlorobenzene	17.66	146	945177	10.90 ug/l	100
90)	n-Butylbenzene	17.93	91	2090622	11.42 ug/l	99
91)	1,2-Dichlorobenzene	18.14	146	791270	10.64 ug/l	99
92)	1,2-Dibromo-3-chloropropan	19.06	157	43558	9.60 ug/l	95
93)	1,2,4-Trichlorobenzene	20.03	180	494322	10.82 ug/l	99
94)	Hexachlorobutadiene	20.18	225	308918	10.75 ug/l	99
95)	Naphthalene	20.34	128	663305	9.89 ug/l	99
96)	1,2,3-Trichlorobenzene	20.62	180	365764	10.39 ug/l	98

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW455.D Vial: 3
Acq On : 24 Feb 2016 11:38 am Operator: ODinh
Sample : VO06B17L Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:59 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW456.D Vial: 4
Acq On : 24 Feb 2016 12:04 pm Operator: ODinh
Sample : VO06B17C Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 12:25 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.89	114	1765866	10.00	ug/l	-0.02
53) CHLOROBENZENE-D5	13.80	117	1502437	10.00	ug/l	-0.02
73) 1,2-DICHLOROBENZENE-D4	18.11	152	492330	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	7.39	111	520255	10.38	ug/l	-0.02
Spiked Amount 10.000			Recovery = 103.80%			
41) 1,2-Dichloroethane-d4	8.22	65	347666	9.49	ug/l	-0.02
Spiked Amount 10.000			Recovery = 94.90%			
54) Toluene-d8	11.34	98	2082987	10.59	ug/l	-0.03
Spiked Amount 10.000			Recovery = 105.90%			
76) 4-Bromofluorobenzene	15.77	95	619672	10.36	ug/l	-0.02
Spiked Amount 10.000			Recovery = 103.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.81	85	586386	8.50	ug/l	100
3) Chloromethane	2.03	50	698377	9.32	ug/l	98
4) Vinyl chloride	2.17	62	621462	9.03	ug/l	98
5) Bromomethane	2.67	94	437393	9.64	ug/l	100
6) Chloroethane	2.77	64	394327	9.68	ug/l	99
7) Dichlorofluoromethane	2.80	67	1093130	10.20	ug/l	99
8) Trichlorofluoromethane	3.07	101	639683	9.23	ug/l	100
9) Acrolein	3.58	56	128686	45.54	ug/l	97
10) 1,1,2-Trichloro-1,2,2-trif	3.62	151	382262	11.15	ug/l	100
11) Acetone	3.67	43	225344	51.31	ug/l	99
12) 1,1-Dichloroethene	3.85	61	963047	10.55	ug/l	100
13) tert-Butyl alcohol	3.96	59	86386	48.69	ug/l	95
15) Methyl acetate	4.32	43	175788	9.90	ug/l	95
16) Iodomethane	4.26	142	944413	10.64	ug/l	100
17) Methylene chloride	4.53	49	658519	10.16	ug/l	98
18) Carbon disulfide	4.53	76	1925640	9.00	ug/l	99
19) Acrylonitrile	4.74	53	369936	48.91	ug/l	98
20) tert-Butyl methyl ether (M	4.78	73	762530	9.39	ug/l	100
21) trans-1,2-Dichloroethene	4.98	61	861756	10.42	ug/l	100
22) Isopropyl ether (DIPE)	5.54	45	1833159	10.54	ug/l	99
23) Vinyl acetate	5.73	43	558072	10.83	ug/l	99
24) 1,1-Dichloroethane	5.70	63	1008991	10.01	ug/l	99
25) 2-Butanol	6.12	45	79031	51.66	ug/l	100
26) tert-Butyl ethyl ether (ET	6.26	59	1251271	9.61	ug/l	99
27) 2-Butanone	6.45	72	101982	45.38	ug/l #	87
28) 2,2-Dichloropropane	6.67	77	478335	10.16	ug/l	100
29) cis-1,2-Dichloroethene	6.75	96	636713	10.40	ug/l	98

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW456.D Vial: 4
Acq On : 24 Feb 2016 12:04 pm Operator: ODinh
Sample : VO06B17C Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 12:25 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.01	83	881077	9.83 ug/l	99
32)	Bromochloromethane	7.28	49	404929	10.32 ug/l	100
33)	Tetrahydrofuran	7.34	42	55969	9.67 ug/l	93
35)	1,1,1-Trichloroethane	7.68	97	662284	9.88 ug/l	99
36)	Cyclohexane	7.68	56	1278583	11.43 ug/l	99
38)	1,1-Dichloropropene	7.95	110	304302	10.24 ug/l	100
39)	Carbon tetrachloride	8.10	119	607413	9.86 ug/l	98
40)	tert-Amyl methyl ether (TA	8.17	87	195275	8.68 ug/l	95
42)	1,2-Dichloroethane	8.38	62	412422	9.70 ug/l	99
43)	Benzene	8.38	78	2346052	10.39 ug/l	99
44)	Trichloroethene	9.39	130	658255	10.60 ug/l	97
45)	Methylcyclohexane	9.48	83	1133439	11.39 ug/l	99
46)	1,2-Dichloropropane	9.69	63	570330	10.24 ug/l	99
47)	1,4-Dioxane	10.12	88	41243	186.70 ug/l	96
48)	Bromodichloromethane	10.06	83	631624	10.16 ug/l	99
49)	Dibromomethane	10.15	93	231325	10.22 ug/l	97
50)	2-Chloroethyl vinyl ether	10.61	63	90172	7.32 ug/l	97
51)	4-Methyl-2-pentanone	10.64	43	1162917	50.56 ug/l	99
52)	cis-1,3-Dichloropropene	10.97	75	803078	10.39 ug/l	99
55)	Toluene	11.48	91	2454299	10.39 ug/l	100
56)	Ethyl methacrylate	11.79	69	358431	9.79 ug/l	98
57)	trans-1,3-Dichloropropene	11.79	75	542259	9.65 ug/l	98
58)	1,1,2-Trichloroethane	12.04	97	293640	9.54 ug/l	99
59)	2-Hexanone	12.07	43	700680	51.04 ug/l	99
60)	1,3-Dichloropropane	12.44	76	558264	10.00 ug/l	98
61)	Tetrachloroethene	12.53	164	501547	10.93 ug/l	100
62)	Dibromochloromethane	12.86	129	376245	9.94 ug/l	100
64)	1,2-Dibromoethane	13.19	107	289724	9.79 ug/l	100
65)	1-Chlorohexane	13.45	91	1092318	10.91 ug/l	99
66)	Chlorobenzene	13.86	112	1435653	10.38 ug/l	99
67)	1,1,1,2-Tetrachloroethane	13.93	131	442155	9.85 ug/l	98
68)	Ethylbenzene	13.94	91	2751355	11.01 ug/l	98
69)	m-Xylene & p-Xylene	14.08	91	3904758	21.53 ug/l	99
70)	o-Xylene	14.78	91	2016311	10.75 ug/l	99
71)	Styrene	14.84	104	1492802	10.30 ug/l	100
72)	Isopropylbenzene	15.37	105	2434819	11.06 ug/l	99
74)	Bromoform	15.39	173	183504	10.41 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.66	83	300683	9.81 ug/l	98
77)	1,2,3-Trichloropropane	15.89	110	78889	10.17 ug/l	98
78)	trans-1,4-Dichloro-2-buten	16.01	53	77639	8.80 ug/l	96
79)	n-Propylbenzene	16.03	91	3264127	11.32 ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW456.D Vial: 4
Acq On : 24 Feb 2016 12:04 pm Operator: ODinh
Sample : VO06B17C Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 12:25 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

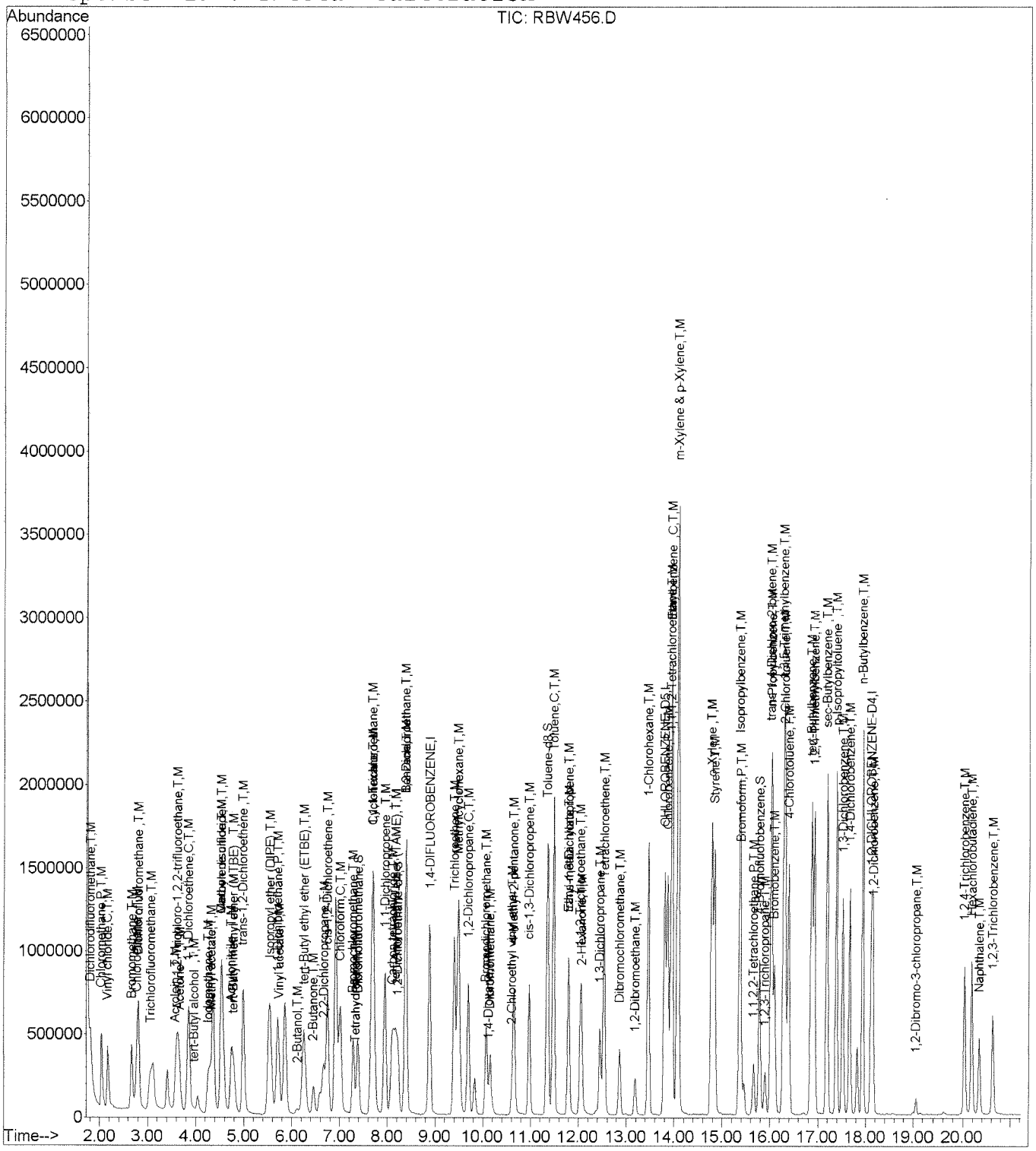
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.09	156	477320	10.57 ug/l	99
81)	1,3,5-Trimethylbenzene	16.28	105	1854196	11.11 ug/l	98
82)	2-Chlorotoluene	16.31	91	1971711	11.40 ug/l	99
83)	4-Chlorotoluene	16.38	91	1493983	10.49 ug/l	99
84)	tert-Butylbenzene	16.86	134	496713	11.07 ug/l	99
85)	1,2,4-Trimethylbenzene	16.92	105	1773561	11.05 ug/l	99
86)	sec-Butylbenzene	17.19	105	2610031	11.50 ug/l	99
87)	p-Isopropyltoluene	17.38	119	2024525	11.12 ug/l	100
88)	1,3-Dichlorobenzene	17.51	146	944213	10.81 ug/l	99
89)	1,4-Dichlorobenzene	17.66	146	913883	10.90 ug/l	100
90)	n-Butylbenzene	17.93	91	2072795	11.72 ug/l	99
91)	1,2-Dichlorobenzene	18.15	146	748608	10.41 ug/l	99
92)	1,2-Dibromo-3-chloropropan	19.06	157	42211	9.62 ug/l	94
93)	1,2,4-Trichlorobenzene	20.03	180	482409	10.93 ug/l	99
94)	Hexachlorobutadiene	20.18	225	307595	11.08 ug/l	99
95)	Naphthalene	20.34	128	654116	10.09 ug/l	99
96)	1,2,3-Trichlorobenzene	20.62	180	359529	10.57 ug/l	99

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW456.D Vial: 4
Acq On : 24 Feb 2016 12:04 pm Operator: ODinh
Sample : VO06B17C Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 12:25 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RAR084
Instrument ID: F3
GC Column: ZB-624 ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 01/19/16
BFB Injection Time : 18:09
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.43
75	30.0 - 60.0% of mass 95	44.06
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.77
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	64.39
175	5.0 - 9.0% of mass 174	4.89(7.6)1
176	95.0 - 101.0% of mass 174	62.80(97.5)1
177	5.0 - 9.0% of mass 176	4.46(7.1)2

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

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	VSTD0.3	VOF3A191	RAR085	01/19/16	19:12
2	VSTD0.5	VOF3A192	RAR086	01/19/16	19:40
3	VSTD01	VOF3A193	RAR087	01/19/16	20:08
4	VSTD02	VOF3A194	RAR088	01/19/16	20:36
5	VSTD05	VOF3A195	RAR089	01/19/16	21:04
6	VSTD010	VOF3A196	RAR090	01/19/16	21:32
7	VSTD020	VOF3A197	RAR091	01/19/16	22:00
8	VSTD030	VOF3A198	RAR092	01/19/16	22:28
9	VSTD050	VOF3A199	RAR093	01/19/16	22:56
10	VSTD100	VOF3A1910	RAR094	01/19/16	23:24
11	VSTD010	IVOF3A1901	RAR097	01/20/16	00:49

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F3
Beginning DateTime :01/19/16 19:12
Spike Units :PPB
IC File :rar090

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :01/19/16 23:24
HPChem Method :vof3a19

M	IDX	Parameters	.3 19:12 rar085	.5 19:40 rar086	1 20:08 rar087	2 20:36 rar088	5 21:04 rar089	10 21:32 rar090	20 22:00 rar091	30 22:28 rar092	50 22:56 rar093	100 23:24 rar094	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	12.9554
	2	Chlorotrifluoroethylene	------	0.062	0.077	0.103	0.130	0.167	0.209	0.194	0.221	0.237	0.156	41.68	4.4361
	3	Dichlorodifluoromethane	------	0.429	0.404	0.450	0.441	0.415	0.435	0.414	0.405	0.403	0.422	4.15	4.5254
	4	Chloromethane	0.539	0.602	0.539	0.630	0.577	0.556	0.569	0.546	0.525	0.510	0.559	6.48	4.9563
	5	2-Chloro-1,1,1-trifluoroethane	0.364	0.403	0.409	0.424	0.417	0.405	0.436	0.422	0.428	0.426	0.413	4.92	5.3927
	6	Vinyl chloride	0.456	0.464	0.462	0.495	0.486	0.463	0.488	0.467	0.456	0.443	0.468	3.53	5.2125
	7	Bromomethane	0.273	0.273	0.260	0.294	0.297	0.289	0.308	0.298	0.302	0.287	0.288	5.26	5.9454
	8	Chloroethane	0.276	0.281	0.269	0.280	0.282	0.263	0.287	0.276	0.268	0.254	0.274	3.72	6.1420
	9	Dichlorofluoromethane	0.814	0.798	0.782	0.753	0.739	0.695	0.710	0.697	0.688	0.647	0.732	7.38	6.5010
	10	Trichlorofluoromethane	0.462	0.423	0.459	0.487	0.476	0.454	0.469	0.465	0.450	0.440	0.459	3.97	6.6127
5	11	Acrolein	------	0.011	0.010	0.010	0.011	0.012	0.012	0.012	0.013	0.012	0.011	7.45	7.4599
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.234	0.204	0.211	0.213	0.211	0.199	0.209	0.208	0.213	0.220	0.212	4.52	7.5661
	13	1,1-Dichloroethene	0.668	0.638	0.660	0.669	0.643	0.617	0.615	0.608	0.601	0.558	0.628	5.58	7.6510
5	14	Acetone	------	------	0.036	0.037	0.037	0.037	0.036	0.035	0.035	0.028	0.035	8.22	7.7314
	15	Iodomethane	0.569	0.545	0.567	0.560	0.561	0.558	0.568	0.587	0.617	0.620	0.575	4.37	8.0398
	16	Methyl acetate	------	0.119	0.111	0.114	0.138	0.133	0.127	0.125	0.125	------	0.124	7.23	8.3110
	17	Carbon disulfide	1.350	1.277	1.193	1.223	1.227	1.229	1.271	1.233	1.207	1.186	1.240	3.93	8.1783
	18	Methylene chloride	0.586	0.531	0.515	0.492	0.495	0.485	0.476	0.471	0.468	------	0.502	7.44	8.5942
5	19	tert-Butyl alcohol	0.013	0.013	0.013	0.012	0.013	0.012	0.013	0.013	0.013	0.011	0.013	4.72	8.6892
	20	tert-Butyl methyl ether (MTBE)	0.424	0.438	0.444	0.457	0.455	0.467	0.446	0.456	0.471	0.424	0.448	3.62	9.0005
	21	trans-1,2-Dichloroethene	0.580	0.620	0.576	0.563	0.575	0.591	0.571	0.557	0.553	------	0.576	3.53	9.1007
5	22	Acrylonitrile	0.040	0.045	0.041	0.043	0.046	0.051	0.052	0.050	0.051	0.044	0.046	9.42	9.1048
	23	Isopropyl ether (DIPE)	1.185	1.273	1.233	1.219	1.272	1.315	1.255	1.240	1.220	1.039	1.225	6.09	9.8764
	24	1,1-Dichloroethane	0.731	0.757	0.706	0.708	0.692	0.719	0.689	0.700	0.675	0.622	0.700	5.14	9.9673
	25	Vinyl acetate	------	------	0.024	0.028	0.033	0.031	0.030	0.032	0.033	0.030	0.030	9.95	9.9490
	26	tert-Butyl ethyl ether (ETBE)	0.708	0.737	0.724	0.739	0.745	0.762	0.741	0.755	0.764	0.687	0.736	3.28	10.5944
	27	2,2-Dichloropropane	0.370	0.369	0.342	0.332	0.325	0.334	0.302	0.289	0.271	------	0.326	10.39	11.0422
	28	cis-1,2-Dichloroethene	0.389	0.420	0.366	0.380	0.371	0.391	0.370	0.378	0.390	0.364	0.382	4.33	11.0711
5	29	2-Butanone	0.043	0.053	0.055	0.060	0.064	0.067	0.067	0.065	0.065	0.052	0.059	13.53	11.0636
5	30	2-Butanol	------	------	------	------	0.009	0.010	0.011	0.012	0.012	0.010	0.011	9.81	11.2702
	31	Bromochloromethane	0.129	0.133	0.134	0.132	0.131	0.140	0.134	0.136	0.144	0.140	0.135	3.43	11.5120
	32	Tetrahydrofuran	0.053	0.055	0.053	0.045	0.042	0.043	0.042	0.040	0.039	------	0.046	13.09	11.5585
	33	Chloroform	------	0.624	0.584	0.592	0.580	0.614	0.582	0.581	0.564	------	0.590	3.36	11.5826
	34	Dibromofluoromethane	0.314	0.355	0.301	0.323	0.322	0.340	0.331	0.327	0.335	0.312	0.326	4.73	11.8576
	35	1,1,1-Trichloroethane	0.480	0.474	0.463	0.453	0.443	0.467	0.445	0.427	0.421	0.373	0.445	7.10	11.8874
	36	Cyclohexane	0.705	0.829	0.764	0.782	0.782	0.794	0.826	0.741	0.727	0.678	0.763	6.53	11.9604
	37	1,1-Dichloropropene	0.178	0.191	0.174	0.175	0.172	0.185	0.179	0.180	0.181	0.178	0.179	3.08	12.1317
	38	Carbon tetrachloride	0.394	0.420	0.410	0.411	0.399	0.429	0.410	0.400	0.401	0.377	0.405	3.54	12.1451
5	39	tert-Amyl alcohol	------	0.006	0.008	0.008	0.009	0.008	0.009	0.009	0.010	0.009	0.008	13.81	12.3408
	40	1,2-Dichloroethane-d4	0.219	0.232	0.201	0.218	0.215	0.220	0.209	0.204	0.199	------	0.213	5.13	12.4093
	41	2,2,4-Trimethylpentane	1.273	1.218	1.192	1.323	1.294	1.292	1.261	1.235	1.177	1.155	1.242	4.50	12.4415
	42	Benzene	1.413	1.421	1.335	1.326	1.307	1.363	1.333	1.283	1.337	------	1.346	3.38	12.4755
	43	1,2-Dichloroethane	0.283	0.274	0.277	0.288	0.282	0.284	0.267	0.258	0.254	------	0.274	4.41	12.5251
	44	tert-Amyl methyl ether (TAME)	0.107	0.104	0.106	0.107	0.105	0.106	0.106	0.106	0.109	0.099	0.105	2.39	12.4996
	45	Trichloroethene	0.387	0.372	0.356	0.355	0.347	0.370	0.362	0.362	0.382	0.380	0.367	3.57	13.3636
	46	Methylcyclohexane	0.471	0.540	0.509	0.539	0.531	0.566	0.583	0.527	0.527	0.506	0.530	5.88	13.5885
	47	1,2-Dichloropropane	0.338	0.357	0.332	0.336	0.328	0.346	0.330	0.329	0.323	0.291	0.331	5.18	13.6913
20	48	1,4-Dioxane	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	7.80	13.8522
	49	Dibromomethane	0.128	0.131	0.130	0.132	0.137	0.140	0.134	0.136	0.139	0.126	0.133	3.48	13.8939
	50	Bromodichloromethane	0.403	0.392	0.398	0.396	0.398	0.407	0.391	0.391	0.390	------	0.396	1.49	14.0462
	51	2-Chloroethyl vinyl ether	0.079	0.073	0.076	0.076	0.074	0.077	0.076	0.080	0.083	0.077	0.077	3.75	14.3452
	52	cis-1,3-Dichloropropene	0.404	0.416	0.415	0.428	0.439	0.457	0.440	0.443	0.446	0.410	0.430	4.14	14.5746
5	53	4-Methyl-2-pentanone	0.118	0.123	0.126	0.140	0.148	0.150	0.151	0.142	0.143	------	0.138	9.01	14.6950
	54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	16.4858
	55	Toluene-d8	1.435	1.586	1.233	1.353	1.367	1.467	1.385	1.401	1.349	------	1.397	6.89	14.8853
	56	Toluene	2.075	1.959	1.704	1.721	1.670	1.752	1.696	1.692	1.629	------	1.766	8.43	14.9681
	57	Ethyl methacrylate	0.292	0.241	0.252	0.254	0.261	0.264	0.249	0.263	0.263	------	0.260	5.46	15.2113
	58	trans-1,3-Dichloropropene	0.401	0.383	0.381	0.390	0.403	0.421	0.394	0.414	0.397	------	0.398	3.32	15.2263

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	59	1,1,2-Trichloroethane	0.211	0.220	0.209	0.221	0.217	0.225	0.211	0.218	0.224	0.206	0.216	3.02	15.4535
	60	Tetrachloroethene	0.329	0.326	0.293	0.310	0.299	0.325	0.310	0.317	0.323	0.327	0.316	3.91	15.5979
5	61	2-Hexanone	------	------	0.086	0.115	0.123	0.122	0.122	0.121	0.117	0.097	0.113	12.39	15.6355
	62	1,3-Dichloropropane	0.418	0.405	0.396	0.404	0.401	0.415	0.383	0.391	0.395	0.359	0.397	4.26	15.6441
	63	Dibromochloromethane	0.296	0.296	0.286	0.297	0.295	0.303	0.290	0.303	0.312	0.297	0.298	2.41	15.9212
	64	1,2-Dibromoethane	0.209	0.205	0.211	0.220	0.228	0.227	0.221	0.230	0.233	0.220	0.220	4.39	16.0716
	65	1-Chlorohexane	0.681	0.697	0.631	0.683	0.678	0.709	0.688	0.684	0.665	0.662	0.678	3.16	16.3800
	66	Chlorobenzene	1.093	1.066	1.010	1.029	1.033	1.077	1.049	1.072	1.086	------	1.057	2.71	16.5156
	67	Ethylbenzene	1.907	1.897	1.784	1.853	1.903	1.982	1.872	1.891	------	------	1.886	2.96	16.5604
	68	1,1,1,2-Tetrachloroethane	0.349	0.339	0.312	0.330	0.332	0.339	0.323	0.331	0.334	0.325	0.331	3.08	16.5752
2	69	m-Xylene & p-Xylene	1.428	1.404	1.309	1.412	1.401	1.473	1.376	1.296	------	------	1.387	4.28	16.6572
	70	o-Xylene	1.487	1.367	1.316	1.378	1.399	1.402	1.341	1.359	1.305	------	1.373	3.96	17.0552
	71	Styrene	0.967	0.958	0.954	1.010	1.055	1.073	1.061	1.091	1.133	------	1.034	6.22	17.0750
	72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	19.0642
	73	Bromoform	0.489	0.507	0.447	0.473	0.434	0.485	0.452	0.438	0.465	0.450	0.464	5.17	17.3512
	74	Isopropylbenzene	7.107	7.355	6.202	6.621	5.982	6.704	6.383	5.889	------	------	6.530	7.96	17.3704
	75	4-Bromofluorobenzene	1.645	1.732	1.334	1.421	1.379	1.536	1.423	1.324	1.316	1.297	1.441	10.38	17.5791
	76	1,1,2,2-Tetrachloroethane	0.953	0.936	0.879	0.896	0.807	0.852	0.789	0.758	0.783	0.709	0.836	9.55	17.6834
	77	trans-1,4-Dichloro-2-butene	0.253	0.210	0.206	0.197	0.183	0.196	0.193	0.189	0.190	------	0.202	10.35	17.7271
	78	n-Propylbenzene	7.822	7.819	7.050	7.419	6.964	7.900	7.488	7.132	------	------	7.449	5.02	17.7465
	79	1,2,3-Trichloropropane	0.234	0.209	0.189	0.211	0.192	0.203	0.192	0.189	0.186	0.177	0.198	8.29	17.7564
	80	Bromobenzene	1.141	1.146	1.056	1.097	1.025	1.119	1.072	1.061	1.095	1.130	1.094	3.70	17.7698
	81	1,3,5-Trimethylbenzene	5.135	5.120	4.640	4.667	4.528	4.923	4.618	4.458	------	------	4.761	5.53	17.8768
	82	2-Chlorotoluene	4.800	4.924	4.499	4.539	4.276	4.679	4.303	------	------	------	4.574	5.31	17.8991
	83	4-Chlorotoluene	4.119	3.974	3.765	3.883	3.749	4.090	3.871	3.781	3.669	------	3.878	4.02	17.9920
	84	tert-Butylbenzene	1.094	1.117	0.953	0.977	0.941	0.995	0.992	0.948	0.966	0.976	0.996	6.09	18.2062
	85	1,2,4-Trimethylbenzene	4.553	4.700	4.186	4.399	4.246	4.689	4.435	4.253	4.252	------	4.413	4.46	18.2485
	86	sec-Butylbenzene	6.449	6.654	6.106	6.518	6.173	6.677	6.548	6.249	------	------	6.422	3.42	18.4057
	87	p-Isopropyltoluene	4.489	4.595	4.272	4.613	4.536	4.992	4.820	4.704	4.713	------	4.637	4.43	18.5100
	88	1,3-Dichlorobenzene	2.066	1.982	1.879	2.017	1.946	2.077	2.043	2.062	2.101	2.173	2.035	4.09	18.6174
	89	1,4-Dichlorobenzene	2.039	1.933	1.894	1.904	1.813	2.024	1.963	1.905	1.991	1.997	1.946	3.59	18.6963
	90	Benzyl Chloride	1.119	0.957	0.931	0.978	0.975	1.036	1.014	1.020	1.032	0.972	1.003	5.29	18.8065
	91	n-Butylbenzene	3.752	3.936	3.736	4.058	4.176	4.509	4.466	4.349	4.212	------	4.133	6.92	18.9039
	92	1,2-Dichlorobenzene	1.751	1.759	1.610	1.643	1.625	1.696	1.677	1.652	1.714	1.676	1.680	3.00	19.0821
	93	1,2-Dibromo-3-chloropropane	0.085	0.078	0.079	0.092	0.091	0.095	0.094	0.097	0.103	0.096	0.091	8.92	19.9014
	94	1,2,4-Trichlorobenzene	0.756	0.735	0.695	0.738	0.763	0.842	0.859	0.884	0.902	0.925	0.810	10.05	20.8115
	95	Hexachlorobutadiene	0.505	0.597	0.529	0.569	0.571	0.625	0.607	0.570	0.568	0.614	0.575	6.51	20.8994
	96	Naphthalene	1.380	1.173	1.086	1.100	1.129	1.230	1.262	1.359	1.440	1.426	1.259	10.78	21.1840
	97	1,2,3-Trichlorobenzene	0.640	0.560	0.564	0.566	0.610	0.653	0.649	0.681	0.704	0.693	0.632	8.63	21.4953

Spike Amount = Nominal Amount * M
Ave_%RSD : 6.2 Max_%RSD : 41.7

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
2	Chlorotrifluoroethylene	-0.01553	0.22306	0.9954

3 4
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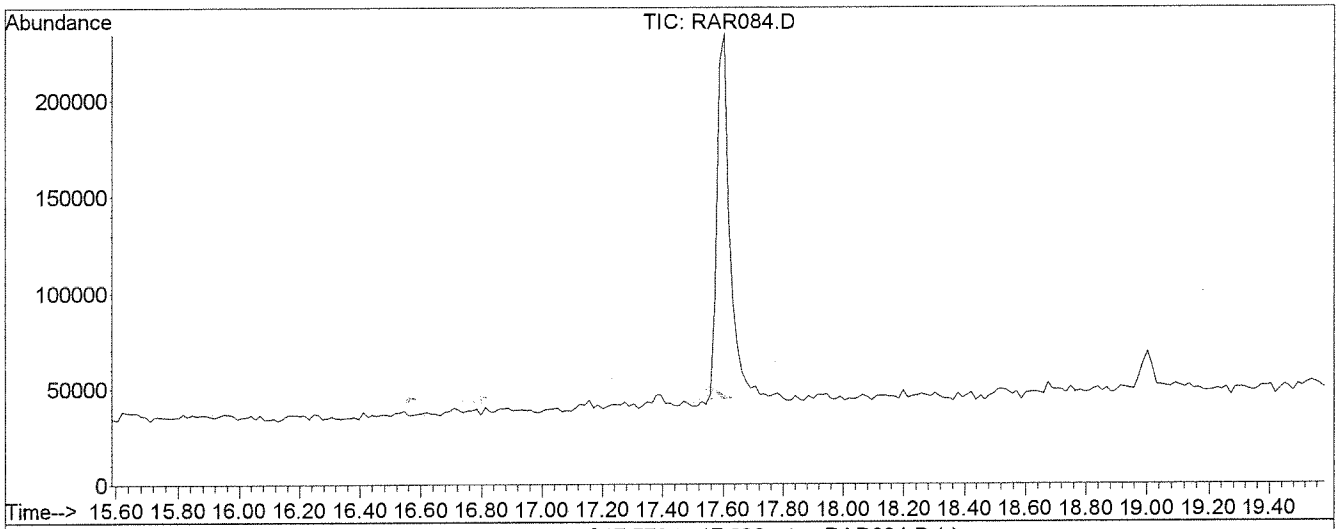
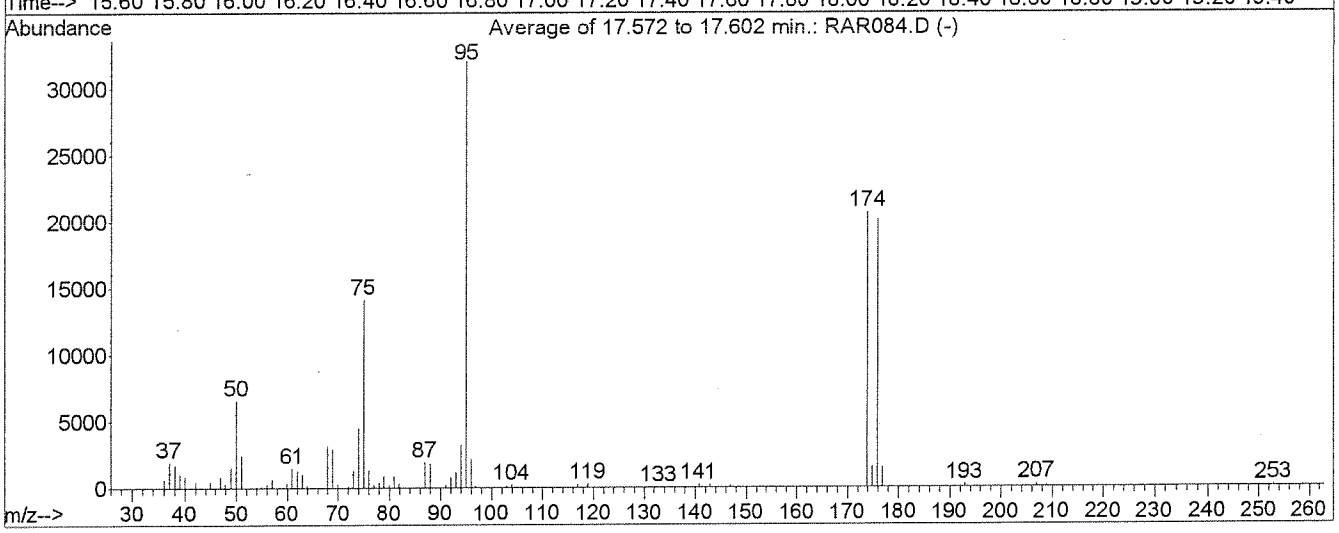
BFB

Data File : C:\HPCHEM\1\DATA\16A19\RAR084.D
Acq On : 19 Jan 2016 6:09 pm
Sample : BFBF3A07
Misc : T/CHK
MS Integration Params: 524INT.P
Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: ODinh
Inst : F3
Multiplr: 1.00





AutoFind: Scans 890, 891, 892; Background Corrected with Scan 886

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.4	6546	PASS
75	95	30	60	44.1	14118	PASS
95	95	100	100	100.0	32041	PASS
96	95	5	9	6.8	2169	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	64.4	20631	PASS
175	174	5	9	7.6	1568	PASS
176	174	95	101	97.5	20122	PASS
177	176	5	9	7.1	1430	PASS

RAR084.D VOF3A19.M Thu Jan 28 16:29:12 2016

SG 1/28/16

Compound List Report F3

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
Total Cpnds : 97

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	12.96	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	4.43	0.342	L	2	A	B
3	T	Dichlorodifluoromethane	85	4.52	0.349	A	1	A	B
4	T	Chloromethane	50	4.96	0.383	A	1	A	B
5	T	2-Chloro-1,1,1-trifluoroethane	118	5.39	0.416	A	2	A	B
6	T	Vinyl chloride	62	5.22	0.403	A	1	A	B
7	T	Bromomethane	94	5.95	0.460	A	1	A	B
8	T	Chloroethane	64	6.15	0.475	A	2	A	B
9	T	Dichlorofluoromethane	67	6.51	0.502	A	1	A	B
10	T	Trichlorofluoromethane	101	6.61	0.510	A	1	A	B
11	T	Acrolein	56	7.46	0.576	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	7.56	0.584	A	1	A	B
13	T	1,1-Dichloroethene	61	7.65	0.591	A	2	A	B
14	T	Acetone	43	7.73	0.596	A	2	A	B
15	T	Iodomethane	142	8.04	0.621	A	1	A	B
16	T	Methyl acetate	43	8.31	0.641	A	1	A	B
17	T	Carbon disulfide	76	8.17	0.631	A	1	A	B
18	T	Methylene chloride	49	8.59	0.663	A	2	A	B
19	T	tert-Butyl alcohol	59	8.68	0.670	A	1	A	B
20	T	tert-Butyl methyl ether (MTBE)	73	8.99	0.694	A	1	A	B
21	T	trans-1,2-Dichloroethene	61	9.10	0.702	A	2	A	B
22	T	Acrylonitrile	53	9.10	0.702	A	2	A	B
23	T	Isopropyl ether (DIPE)	45	9.87	0.762	A	1	A	B
24	T	1,1-Dichloroethane	63	9.96	0.769	A	2	A	B
25	T	Vinyl acetate	86	9.95	0.768	A	1	A	B
26	T	tert-Butyl ethyl ether (ETBE)	59	10.59	0.817	A	1	A	B
27	T	2,2-Dichloropropane	77	11.03	0.852	A	2	A	B
28	T	cis-1,2-Dichloroethene	96	11.06	0.854	A	2	A	B
29	T	2-Butanone	43	11.03	0.852	A	1	A	B
30	T	2-Butanol	45	11.27	0.870	A	1	A	B
31	T	Bromochloromethane	128	11.51	0.888	A	2	A	B
32	T	Tetrahydrofuran	42	11.56	0.892	A	2	A	B
33	T	Chloroform	83	11.59	0.894	A	2	A	B
34	S	Dibromofluoromethane	111	11.85	0.915	A	2	A	B
35	T	1,1,1-Trichloroethane	97	11.88	0.917	A	2	A	B
36	T	Cyclohexane	56	11.96	0.923	A	2	A	B
37	T	1,1-Dichloropropene	110	12.14	0.937	A	1	A	B
38	T	Carbon tetrachloride	119	12.14	0.937	A	1	A	B
39	T	tert-Amyl alcohol	59	12.33	0.952	A	2	A	B
40	S	1,2-Dichloroethane-d4	65	12.40	0.957	A	1	A	B
41	T	2,2,4-Trimethylpentane	57	12.43	0.960	A	3	A	B
42	T	Benzene	78	12.46	0.962	A	2	A	B
43	T	1,2-Dichloroethane	62	12.52	0.967	A	1	A	B
44	T	tert-Amyl methyl ether (TAME)	87	12.49	0.964	A	2	A	B
45	T	Trichloroethene	130	13.36	1.031	A	3	A	B
46	T	Methylcyclohexane	83	13.58	1.048	A	2	A	B
47	T	1,2-Dichloropropane	63	13.69	1.056	A	2	A	B
48	T	1,4-Dioxane	88	13.85	1.069	A	1	A	B
49	T	Dibromomethane	93	13.89	1.072	A	2	A	B
50	T	Bromodichloromethane	83	14.04	1.084	A	1	A	B
51	T	2-Chloroethyl vinyl ether	63	14.33	1.106	A	1	A	B
52	T	cis-1,3-Dichloropropene	75	14.56	1.124	A	3	A	B
53	T	4-Methyl-2-pentanone	43	14.68	1.133	A	3	A	B

SM 1/28/16

54	I	CHLOROBENZENE-D5	117	16.49	1.000	A	2	A	B
55	S	Toluene-d8	98	14.88	0.902	A	1	A	B
56	T	Toluene	91	14.97	0.908	A	1	A	B
57	T	Ethyl methacrylate	69	15.20	0.922	A	2	A	B
58	T	trans-1,3-Dichloropropene	75	15.22	0.923	A	2	A	B
59	T	1,1,2-Trichloroethane	97	15.44	0.937	A	3	A	B
60	T	Tetrachloroethene	164	15.59	0.946	A	3	A	B
61	T	2-Hexanone	43	15.64	0.948	A	2	A	B
62	T	1,3-Dichloropropane	76	15.64	0.948	A	1	A	B
63	T	Dibromochloromethane	129	15.92	0.966	A	1	A	B
64	T	1,2-Dibromoethane	107	16.07	0.975	A	1	A	B
65	T	1-Chlorohexane	91	16.37	0.993	A	3	A	B
66	P,M	Chlorobenzene	112	16.52	1.002	A	3	A	B
67	T	Ethylbenzene	91	16.56	1.004	A	1	A	B
68	T	1,1,1,2-Tetrachloroethane	131	16.58	1.005	A	3	A	B
69	T	m-Xylene & p-Xylene	91	16.65	1.010	A	1	A	B
70	T	o-Xylene	91	17.05	1.034	A	1	A	B
71	T	Styrene	104	17.07	1.035	A	2	A	B
72	I	1,2-DICHLOROBENZENE-D4	152	19.06	1.000	A	1	A	B
73	T	Bromoform	173	17.35	0.910	A	2	A	B
74	T	Isopropylbenzene	105	17.36	0.911	A	3	A	B
75	S	4-Bromofluorobenzene	95	17.57	0.922	A	2	A	B
76	T	1,1,2,2-Tetrachloroethane	83	17.68	0.927	A	1	A	B
77	T	trans-1,4-Dichloro-2-butene	53	17.72	0.930	A	1	A	B
78	T	n-Propylbenzene	91	17.74	0.930	A	2	A	B
79	T	1,2,3-Trichloropropane	110	17.75	0.931	A	1	A	B
80	T	Bromobenzene	156	17.77	0.932	A	2	A	B
81	T	1,3,5-Trimethylbenzene	105	17.87	0.937	A	2	A	B
82	T	2-Chlorotoluene	91	17.90	0.939	A	1	A	B
83	T	4-Chlorotoluene	91	17.99	0.944	A	1	A	B
84	T	tert-Butylbenzene	134	18.20	0.955	A	2	A	B
85	T	1,2,4-Trimethylbenzene	105	18.24	0.957	A	1	A	B
86	T	sec-Butylbenzene	105	18.41	0.966	A	1	A	B
87	T	p-Isopropyltoluene	119	18.51	0.971	A	2	A	B
88	T	1,3-Dichlorobenzene	146	18.62	0.977	A	2	A	B
89	T	1,4-Dichlorobenzene	146	18.69	0.980	A	2	A	B
90	T	Benzyl Chloride	91	18.81	0.987	A	3	A	B
91	T	n-Butylbenzene	91	18.90	0.991	A	2	A	B
92	T	1,2-Dichlorobenzene	146	19.08	1.001	A	2	A	B
93	T	1,2-Dibromo-3-chloropropane	157	19.90	1.044	A	2	A	B
94	T	1,2,4-Trichlorobenzene	180	20.81	1.091	A	2	A	B
95	T	Hexachlorobutadiene	225	20.90	1.096	A	2	A	B
96	T	Naphthalene	128	21.18	1.111	A	1	A	B
97	T	1,2,3-Trichlorobenzene	180	21.49	1.127	A	2	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

VOF3A19.M Mon Jan 25 15:53:14 2016

SY 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR085.D
Acq On : 19 Jan 2016 7:12 pm
Sample : VOF3A191
Misc : 0.3ppb 8260/1.5ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 26 10:49 2016

Vial: 2
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2422787	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1768809	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.07	152	453154	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.87	111	22799	0.29 ug/l	0.02
Spiked Amount 10.000			Recovery	= 2.90%	
40) 1,2-Dichloroethane-d4	12.42	65	15952	0.31 ug/l	0.02
Spiked Amount 10.000			Recovery	= 3.10%	
55) Toluene-d8	14.91	98	76126	0.31 ug/l	0.03
Spiked Amount 10.000			Recovery	= 3.10%	
75) 4-Bromofluorobenzene	17.59	95	22365	0.34 ug/l	0.02
Spiked Amount 10.000			Recovery	= 3.40%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.44	116	4687	0.78 ug/l #	51
3) Dichlorodifluoromethane	4.53	85	35200	0.34 ug/l	99
4) Chloromethane	4.96	50	39163	0.29 ug/l	92
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	26460	0.26 ug/l	87
6) Vinyl chloride	5.21	62	33142	0.29 ug/l	92
7) Bromomethane	5.96	94	19851	0.28 ug/l	80
8) Chloroethane	6.15	64	20082	0.30 ug/l	94
9) Dichlorofluoromethane	6.51	67	59182	0.33 ug/l	86
10) Trichlorofluoromethane	6.61	101	33567	0.30 ug/l	96
11) Acrolein	7.48	56	7906	2.84 ug/l #	61
12) 1,1,2-Trichloro-1,2,2-trif	7.57	151	17032	0.33 ug/l	94
13) 1,1-Dichloroethene	7.66	61	48541	0.32 ug/l	98
14) Acetone	7.75	43	16769	1.97 ug/l	95
15) Iodomethane	8.04	142	41391	0.30 ug/l	99
16) Methyl acetate	8.34	43	9289	0.31 ug/l	96
17) Carbon disulfide	8.19	76	98153	0.33 ug/l	92
18) Methylene chloride	8.60	49	42559	0.35 ug/l	95
19) tert-Butyl alcohol	8.71	59	4783	1.57 ug/l #	28
20) tert-Butyl methyl ether (M	9.01	73	30809	0.28 ug/l	69
21) trans-1,2-Dichloroethene	9.12	61	42139	0.30 ug/l	99
22) Acrylonitrile	9.15	53	14380	1.28 ug/l	93
23) Isopropyl ether (DIPE)	9.89	45	86094	0.29 ug/l	100
24) 1,1-Dichloroethane	9.98	63	53127	0.31 ug/l	98
26) tert-Butyl ethyl ether (ET	10.61	59	51485	0.29 ug/l	99
27) 2,2-Dichloropropane	11.05	77	26908	0.34 ug/l	98
28) cis-1,2-Dichloroethene	11.10	96	28238	0.31 ug/l	99
29) 2-Butanone	11.14	43	15569	1.09 ug/l	100

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

SAY 28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR085.D
Acq On : 19 Jan 2016 7:12 pm
Sample : VOF3A191
Misc : 0.3ppb 8260/1.5ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 26 10:49 2016

Vial: 2
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
30)	2-Butanol	11.32	45	2137	0.83 ug/l		94
31)	Bromochloromethane	11.53	128	9362	0.29 ug/l		94
32)	Tetrahydrofuran	11.59	42	3817	0.34 ug/l		69
33)	Chloroform	11.59	83	43085	0.30 ug/l		98
35)	1,1,1-Trichloroethane	11.90	97	34871	0.32 ug/l		98
36)	Cyclohexane	11.98	56	51224	0.28 ug/l		94
37)	1,1-Dichloropropene	12.14	110	12905	0.30 ug/l		99
38)	Carbon tetrachloride	12.16	119	28665	0.29 ug/l		98
39)	tert-Amyl alcohol	12.35	59	2317	1.14 ug/l	#	67
41)	2,2,4-Trimethylpentane	12.45	57	92562	0.31 ug/l		97
42)	Benzene	12.48	78	102666	0.31 ug/l		98
43)	1,2-Dichloroethane	12.54	62	20598	0.31 ug/l		95
44)	tert-Amyl methyl ether (TA	12.51	87	7744	0.30 ug/l	#	84
45)	Trichloroethene	13.38	130	28151	0.32 ug/l		97
46)	Methylcyclohexane	13.60	83	34269	0.27 ug/l		99
47)	1,2-Dichloropropane	13.71	63	24585	0.31 ug/l		82
48)	1,4-Dioxane	13.90	88	1334	5.20 ug/l	#	1
49)	Dibromomethane	13.91	93	9281	0.29 ug/l		95
50)	Bromodichloromethane	14.06	83	29304	0.31 ug/l		98
51)	2-Chloroethyl vinyl ether	14.41	63	5733	0.31 ug/l		69
52)	cis-1,3-Dichloropropene	14.60	75	29376	0.28 ug/l		90
53)	4-Methyl-2-pentanone	14.72	43	42957	1.29 ug/l		97
56)	Toluene	14.99	91	110087	0.35 ug/l		99
57)	Ethyl methacrylate	15.25	69	15487	0.34 ug/l		72
58)	trans-1,3-Dichloropropene	15.25	75	21266	0.30 ug/l	#	55
59)	1,1,2-Trichloroethane	15.48	97	11174	0.29 ug/l		95
60)	Tetrachloroethene	15.61	164	17461	0.31 ug/l		96
61)	2-Hexanone	15.70	43	18271	0.92 ug/l		81
62)	1,3-Dichloropropane	15.67	76	22164	0.32 ug/l		79
63)	Dibromochloromethane	15.94	129	15726	0.30 ug/l		95
64)	1,2-Dibromoethane	16.09	107	11067	0.28 ug/l		97
65)	1-Chlorohexane	16.39	91	36139	0.30 ug/l		97
66)	Chlorobenzene	16.52	112	58016	0.31 ug/l		79
67)	Ethylbenzene	16.57	91	101178	0.30 ug/l		99
68)	1,1,1,2-Tetrachloroethane	16.58	131	18526	0.32 ug/l	#	1
69)	m-Xylene & p-Xylene	16.67	91	151527	0.62 ug/l		99
70)	o-Xylene	17.07	91	78922	0.32 ug/l		94
71)	Styrene	17.10	104	51292	0.28 ug/l		91
73)	Bromoform	17.37	173	6643	0.32 ug/l		97
74)	Isopropylbenzene	17.38	105	96612	0.33 ug/l		98
76)	1,1,2,2-Tetrachloroethane	17.70	83	12956	0.34 ug/l		93

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

SU 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR085.D
Acq On : 19 Jan 2016 7:12 pm
Sample : VOF3A191
Misc : 0.3ppb 8260/1.5ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 26 10:49 2016

Vial: 2
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
77)	trans-1,4-Dichloro-2-buten	17.76	53	3438	0.38 ug/l		52
78)	n-Propylbenzene	17.76	91	106341	0.32 ug/l		99
79)	1,2,3-Trichloropropane	17.77	110	3181	0.35 ug/l		86
80)	Bromobenzene	17.79	156	15518	0.31 ug/l		97
81)	1,3,5-Trimethylbenzene	17.89	105	69803	0.32 ug/l		99
82)	2-Chlorotoluene	17.91	91	65250	0.31 ug/l		100
83)	4-Chlorotoluene	18.01	91	55997	0.32 ug/l		100
84)	tert-Butylbenzene	18.22	134	14872	0.33 ug/l		97
85)	1,2,4-Trimethylbenzene	18.26	105	61900	0.31 ug/l		100
86)	sec-Butylbenzene	18.41	105	87672	0.30 ug/l		99
87)	p-Isopropyltoluene	18.52	119	61021	0.29 ug/l		94
88)	1,3-Dichlorobenzene	18.64	146	28091	0.30 ug/l		99
89)	1,4-Dichlorobenzene	18.71	146	27723	0.31 ug/l		98
90)	Benzyl Chloride	18.83	91	15206	0.33 ug/l		94
91)	n-Butylbenzene	18.92	91	51006	0.27 ug/l		97
92)	1,2-Dichlorobenzene	19.10	146	23805	0.31 ug/l	#	76
93)	1,2-Dibromo-3-chloropropan	19.92	157	1149	0.28 ug/l		87
94)	1,2,4-Trichlorobenzene	20.84	180	10277	0.28 ug/l		97
95)	Hexachlorobutadiene	20.91	225	6866	0.26 ug/l		86
96)	Naphthalene	21.21	128	18761	0.33 ug/l		90
97)	1,2,3-Trichlorobenzene	21.51	180	8706	0.30 ug/l		87

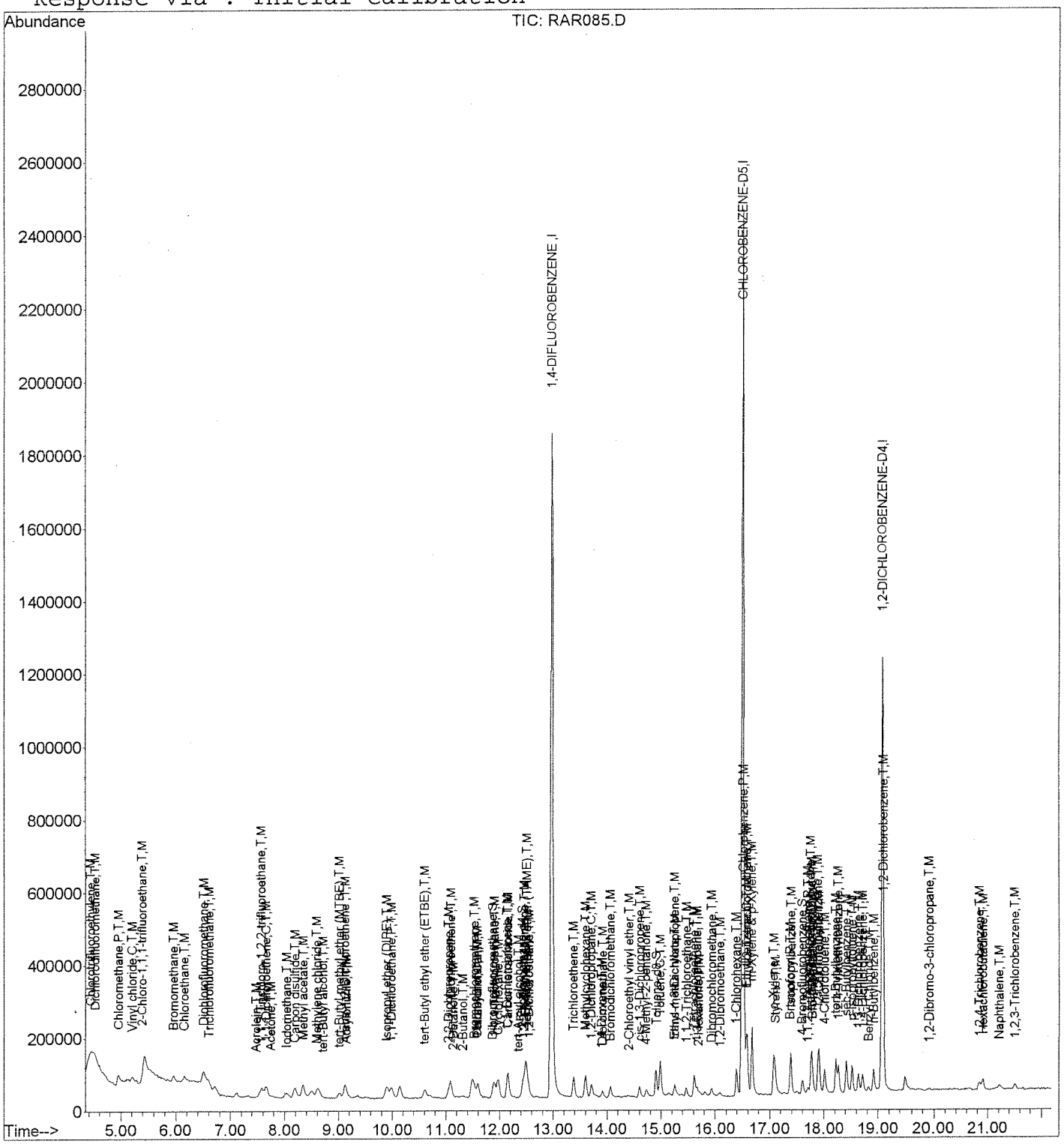
Su 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR085.D Vial: 2
Acq On : 19 Jan 2016 7:12 pm Operator: ODinh
Sample : VOF3A191 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 26 10:49 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



SY 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR086.D
Acq On : 19 Jan 2016 7:40 pm
Sample : VOF3A192
Misc : 0.5ppb 8260/2.5ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:10 2016

Vial: 3
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2571731	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1854362	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.07	152	453375	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.86	111	45608	0.54 ug/l	0.00
Spiked Amount 10.000			Recovery	= 5.40%	
40) 1,2-Dichloroethane-d4	12.42	65	29885	0.55 ug/l	0.02
Spiked Amount 10.000			Recovery	= 5.50%	
55) Toluene-d8	14.90	98	147054	0.57 ug/l	0.02
Spiked Amount 10.000			Recovery	= 5.70%	
75) 4-Bromofluorobenzene	17.59	95	39252	0.60 ug/l	0.02
Spiked Amount 10.000			Recovery	= 6.00%	

Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.44	116	8010	0.84 ug/l	94
3) Dichlorodifluoromethane	4.53	85	55210	0.51 ug/l	100
4) Chloromethane	4.96	50	77404	0.54 ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	5.41	118	51769	0.49 ug/l	90
6) Vinyl chloride	5.21	62	59633	0.50 ug/l	100
7) Bromomethane	5.96	94	35113	0.47 ug/l	97
8) Chloroethane	6.15	64	36135	0.51 ug/l	96
9) Dichlorofluoromethane	6.51	67	102617	0.54 ug/l	98
10) Trichlorofluoromethane	6.61	101	54366	0.46 ug/l	95
11) Acrolein	7.48	56	7150	2.42 ug/l	78
12) 1,1,2-Trichloro-1,2,2-trif	7.57	151	26249	0.48 ug/l	100
13) 1,1-Dichloroethene	7.66	61	81978	0.51 ug/l	97
14) Acetone	7.75	43	25873	2.87 ug/l	99
15) Iodomethane	8.04	142	70052	0.47 ug/l	98
16) Methyl acetate	8.33	43	15270	0.48 ug/l	95
17) Carbon disulfide	8.18	76	164240	0.52 ug/l	96
18) Methylene chloride	8.60	49	68226	0.53 ug/l	94
19) tert-Butyl alcohol	8.71	59	8197	2.53 ug/l #	19
20) tert-Butyl methyl ether (M	9.01	73	56292	0.49 ug/l	98
21) trans-1,2-Dichloroethene	9.10	61	79758	0.54 ug/l	97
22) Acrylonitrile	9.13	53	29211	2.45 ug/l	97
23) Isopropyl ether (DIPE)	9.88	45	163686	0.52 ug/l	99
24) 1,1-Dichloroethane	9.98	63	97393	0.54 ug/l	99
25) Vinyl acetate	10.00	86	2780	0.36 ug/l #	80
26) tert-Butyl ethyl ether (ET	10.61	59	94804	0.50 ug/l	100
27) 2,2-Dichloropropane	11.05	77	47500	0.57 ug/l	99
28) cis-1,2-Dichloroethene	11.08	96	53955	0.55 ug/l	93

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

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR086.D
Acq On : 19 Jan 2016 7:40 pm
Sample : VOF3A192
Misc : 0.5ppb 8260/2.5ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:10 2016

Vial: 3
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
29)	2-Butanone	11.11	43	33906	2.23 ug/l		95
30)	2-Butanol	11.34	45	5052	1.84 ug/l		94
31)	Bromochloromethane	11.51	128	17150	0.49 ug/l		99
32)	Tetrahydrofuran	11.57	42	7023	0.60 ug/l		91
33)	Chloroform	11.59	83	80257	0.53 ug/l		99
35)	1,1,1-Trichloroethane	11.89	97	60930	0.53 ug/l		99
36)	Cyclohexane	11.96	56	106542	0.54 ug/l		98
37)	1,1-Dichloropropene	12.14	110	24582	0.53 ug/l		96
38)	Carbon tetrachloride	12.16	119	53973	0.52 ug/l		99
39)	tert-Amyl alcohol	12.36	59	3665	1.69 ug/l	#	61
41)	2,2,4-Trimethylpentane	12.44	57	156560	0.49 ug/l		99
42)	Benzene	12.48	78	182671	0.53 ug/l		98
43)	1,2-Dichloroethane	12.53	62	35285	0.50 ug/l		87
44)	tert-Amyl methyl ether (TA	12.51	87	13355	0.49 ug/l	#	89
45)	Trichloroethene	13.38	130	47883	0.51 ug/l		99
46)	Methylcyclohexane	13.59	83	69449	0.51 ug/l		96
47)	1,2-Dichloropropane	13.70	63	45889	0.54 ug/l		87
48)	1,4-Dioxane	13.87	88	2824	10.38 ug/l	#	29
49)	Dibromomethane	13.90	93	16805	0.49 ug/l		98
50)	Bromodichloromethane	14.05	83	50460	0.50 ug/l		97
51)	2-Chloroethyl vinyl ether	14.36	63	9408	0.47 ug/l		86
52)	cis-1,3-Dichloropropene	14.58	75	53528	0.48 ug/l		93
53)	4-Methyl-2-pentanone	14.72	43	78907	2.23 ug/l		99
56)	Toluene	14.97	91	181664	0.55 ug/l		100
57)	Ethyl methacrylate	15.24	69	22390	0.46 ug/l		95
58)	trans-1,3-Dichloropropene	15.24	75	35488	0.48 ug/l		96
59)	1,1,2-Trichloroethane	15.46	97	20403	0.51 ug/l		96
60)	Tetrachloroethene	15.61	164	30199	0.52 ug/l		98
61)	2-Hexanone	15.69	43	36854	1.76 ug/l		94
62)	1,3-Dichloropropane	15.66	76	37594	0.51 ug/l		89
63)	Dibromochloromethane	15.92	129	27478	0.50 ug/l		97
64)	1,2-Dibromoethane	16.07	107	18976	0.46 ug/l		92
65)	1-Chlorohexane	16.39	91	64605	0.51 ug/l		98
66)	Chlorobenzene	16.52	112	98845	0.50 ug/l		86
67)	Ethylbenzene	16.56	91	175891	0.50 ug/l		100
68)	1,1,1,2-Tetrachloroethane	16.58	131	31402	0.51 ug/l	#	1
69)	m-Xylene & p-Xylene	16.67	91	260357	1.01 ug/l		100
70)	o-Xylene	17.06	91	126791	0.50 ug/l		99
71)	Styrene	17.09	104	88849	0.46 ug/l		93
73)	Bromoform	17.35	173	11498	0.55 ug/l		93
74)	Isopropylbenzene	17.37	105	166726	0.56 ug/l		98

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

SU 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR086.D
Acq On : 19 Jan 2016 7:40 pm
Sample : VOF3A192
Misc : 0.5ppb 8260/2.5ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:10 2016

Vial: 3
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.70	83	21227	0.56 ug/l	94
77)	trans-1,4-Dichloro-2-buten	17.76	53	4751	0.52 ug/l	75
78)	n-Propylbenzene	17.76	91	177238	0.52 ug/l	98
79)	1,2,3-Trichloropropane	17.76	110	4734	0.53 ug/l	72
80)	Bromobenzene	17.77	156	25975	0.52 ug/l	98
81)	1,3,5-Trimethylbenzene	17.88	105	116062	0.54 ug/l	98
82)	2-Chlorotoluene	17.91	91	111624	0.54 ug/l	99
83)	4-Chlorotoluene	17.99	91	90095	0.51 ug/l	97
84)	tert-Butylbenzene	18.22	134	25324	0.56 ug/l	92
85)	1,2,4-Trimethylbenzene	18.25	105	106553	0.53 ug/l	99
86)	sec-Butylbenzene	18.41	105	150839	0.52 ug/l	99
87)	p-Isopropyltoluene	18.52	119	104165	0.50 ug/l	96
88)	1,3-Dichlorobenzene	18.62	146	44934	0.49 ug/l	98
89)	1,4-Dichlorobenzene	18.71	146	43819	0.50 ug/l	99
90)	Benzyl Chloride	18.81	91	21696	0.48 ug/l	90
91)	n-Butylbenzene	18.90	91	89219	0.48 ug/l	97
92)	1,2-Dichlorobenzene	19.08	146	39881	0.52 ug/l	87
93)	1,2-Dibromo-3-chloropropan	19.92	157	1760	0.43 ug/l #	14
94)	1,2,4-Trichlorobenzene	20.82	180	16670	0.45 ug/l	94
95)	Hexachlorobutadiene	20.90	225	13543	0.52 ug/l	98
96)	Naphthalene	21.20	128	26582	0.47 ug/l	93
97)	1,2,3-Trichlorobenzene	21.51	180	12693	0.44 ug/l	98

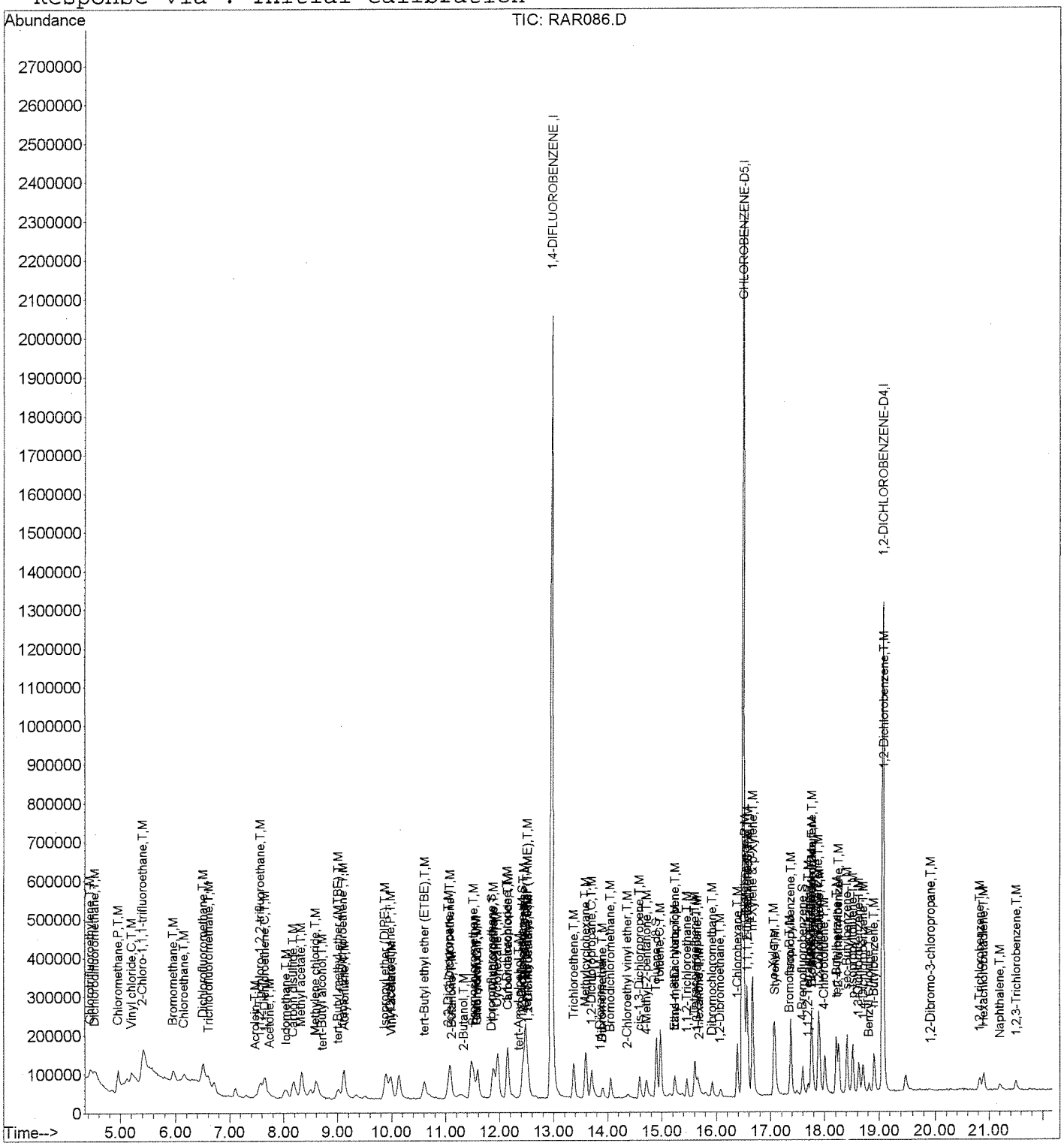
Su 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR086.D Vial: 3
Acq On : 19 Jan 2016 7:40 pm Operator: ODinh
Sample : VOF3A192 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:10 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR087.D Vial: 4
Acq On : 19 Jan 2016 8:08 pm Operator: ODinh
Sample : VOF3A193 Inst : F3
Misc : 1.0ppb 8260/5.0ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:12 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.95	114	2319993	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.48	117	1793020	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	490999	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.87	111	69744	0.92 ug/l	0.01
Spiked Amount 10.000			Recovery	= 9.20%	
40) 1,2-Dichloroethane-d4	12.42	65	46557	0.94 ug/l	0.01
Spiked Amount 10.000			Recovery	= 9.40%	
55) Toluene-d8	14.89	98	221074	0.88 ug/l	0.01
Spiked Amount 10.000			Recovery	= 8.80%	
75) 4-Bromofluorobenzene	17.59	95	65475	0.93 ug/l	0.01
Spiked Amount 10.000			Recovery	= 9.30%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.43	116	17921	1.04 ug/l #	49
3) Dichlorodifluoromethane	4.52	85	93640	0.96 ug/l	96
4) Chloromethane	4.95	50	125066	0.96 ug/l	98
5) 2-Chloro-1,1,1-trifluoroet	5.40	118	94873	0.99 ug/l	100
6) Vinyl chloride	5.21	62	107102	0.99 ug/l	100
7) Bromomethane	5.95	94	60331	0.90 ug/l	97
8) Chloroethane	6.15	64	62315	0.98 ug/l	96
9) Dichlorofluoromethane	6.50	67	181494	1.07 ug/l	99
10) Trichlorofluoromethane	6.62	101	106506	1.00 ug/l	97
11) Acrolein	7.47	56	12055	4.52 ug/l	91
12) 1,1,2-Trichloro-1,2,2-trif	7.58	151	49002	1.00 ug/l	99
13) 1,1-Dichloroethene	7.65	61	153169	1.05 ug/l	98
14) Acetone	7.74	43	41575	5.11 ug/l	96
15) Iodomethane	8.04	142	131508	0.99 ug/l	99
16) Methyl acetate	8.34	43	25744	0.90 ug/l	98
17) Carbon disulfide	8.19	76	276737	0.96 ug/l	98
18) Methylene chloride	8.60	49	119442	1.03 ug/l	99
19) tert-Butyl alcohol	8.69	59	14570	4.99 ug/l	83
20) tert-Butyl methyl ether (M	9.01	73	102949	0.99 ug/l	99
21) trans-1,2-Dichloroethene	9.11	61	133701	1.00 ug/l	99
22) Acrylonitrile	9.13	53	47996	4.47 ug/l	100
23) Isopropyl ether (DIPE)	9.89	45	286151	1.01 ug/l	99
24) 1,1-Dichloroethane	9.97	63	163808	1.01 ug/l	99
25) Vinyl acetate	9.97	86	5615	0.80 ug/l #	43
26) tert-Butyl ethyl ether (ET	10.60	59	168043	0.98 ug/l	99
27) 2,2-Dichloropropane	11.05	77	79369	1.05 ug/l	98
28) cis-1,2-Dichloroethene	11.08	96	84990	0.96 ug/l	99

(#) = qualifier out of range (m) = manual integration
RAR087.D VOF3A19.M Wed Jan 27 16:16:55 2016 SU 1/28/16 Page 1

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR087.D
Acq On : 19 Jan 2016 8:08 pm
Sample : VOF3A193
Misc : 1.0ppb 8260/5.0ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:12 2016

Vial: 4
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
29)	2-Butanone	11.09	43	64066	4.68 ug/l		100
30)	2-Butanol	11.32	45	9849	3.98 ug/l	#	58
31)	Bromochloromethane	11.51	128	31023	0.99 ug/l		97
32)	Tetrahydrofuran	11.57	42	12337	1.16 ug/l		90
33)	Chloroform	11.58	83	135517	0.99 ug/l		98
35)	1,1,1-Trichloroethane	11.90	97	107508	1.04 ug/l		98
36)	Cyclohexane	11.96	56	177275	1.00 ug/l		98
37)	1,1-Dichloropropene	12.13	110	40402	0.97 ug/l		95
38)	Carbon tetrachloride	12.15	119	95021	1.01 ug/l		98
39)	tert-Amyl alcohol	12.36	59	9440	4.83 ug/l	#	62
41)	2,2,4-Trimethylpentane	12.45	57	276537	0.96 ug/l		99
42)	Benzene	12.48	78	309795	0.99 ug/l		100
43)	1,2-Dichloroethane	12.52	62	64186	1.01 ug/l		94
44)	tert-Amyl methyl ether (TA	12.51	87	24674	1.01 ug/l		92
45)	Trichloroethene	13.37	130	82615	0.97 ug/l		99
46)	Methylcyclohexane	13.59	83	118017	0.96 ug/l		99
47)	1,2-Dichloropropane	13.70	63	76961	1.00 ug/l		93
48)	1,4-Dioxane	13.86	88	5110	20.81 ug/l	#	44
49)	Dibromomethane	13.91	93	30180	0.98 ug/l		98
50)	Bromodichloromethane	14.06	83	92378	1.00 ug/l		99
51)	2-Chloroethyl vinyl ether	14.37	63	17583	0.98 ug/l		98
52)	cis-1,3-Dichloropropene	14.58	75	96224	0.97 ug/l		95
53)	4-Methyl-2-pentanone	14.70	43	145633	4.56 ug/l		98
56)	Toluene	14.97	91	305483	0.96 ug/l		99
57)	Ethyl methacrylate	15.22	69	45118	0.97 ug/l		89
58)	trans-1,3-Dichloropropene	15.23	75	68337	0.96 ug/l		84
59)	1,1,2-Trichloroethane	15.46	97	37514	0.97 ug/l		97
60)	Tetrachloroethene	15.61	164	52605	0.93 ug/l		97
61)	2-Hexanone	15.67	43	76839	3.80 ug/l		88
62)	1,3-Dichloropropane	15.65	76	70916	1.00 ug/l		98
63)	Dibromochloromethane	15.92	129	51257	0.96 ug/l		99
64)	1,2-Dibromoethane	16.08	107	37761	0.96 ug/l		100
65)	1-Chlorohexane	16.38	91	113189	0.93 ug/l		98
66)	Chlorobenzene	16.51	112	181093	0.96 ug/l		94
67)	Ethylbenzene	16.56	91	319866	0.95 ug/l		100
68)	1,1,1,2-Tetrachloroethane	16.57	131	55859	0.94 ug/l	#	66
69)	m-Xylene & p-Xylene	16.66	91	469373	1.89 ug/l		99
70)	o-Xylene	17.05	91	236034	0.96 ug/l		100
71)	Styrene	17.08	104	171031	0.92 ug/l		96
73)	Bromoform	17.35	173	21944	0.96 ug/l		98
74)	Isopropylbenzene	17.38	105	304497	0.95 ug/l		99

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

SH 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR087.D
Acq On : 19 Jan 2016 8:08 pm
Sample : VOF3A193
Misc : 1.0ppb 8260/5.0ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:12 2016

Vial: 4
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.69	83	43140	1.05 ug/l	98
77)	trans-1,4-Dichloro-2-buten	17.74	53	10123	1.02 ug/l	96
78)	n-Propylbenzene	17.75	91	346163	0.95 ug/l	98
79)	1,2,3-Trichloropropane	17.77	110	9287	0.95 ug/l	82
80)	Bromobenzene	17.78	156	51827	0.96 ug/l	97
81)	1,3,5-Trimethylbenzene	17.88	105	227831	0.97 ug/l	98
82)	2-Chlorotoluene	17.90	91	220880	0.98 ug/l	98
83)	4-Chlorotoluene	17.99	91	184867	0.97 ug/l	98
84)	tert-Butylbenzene	18.21	134	46787	0.96 ug/l	99
85)	1,2,4-Trimethylbenzene	18.26	105	205532	0.95 ug/l	99
86)	sec-Butylbenzene	18.41	105	299792	0.95 ug/l	99
87)	p-Isopropyltoluene	18.51	119	209772	0.92 ug/l	98
88)	1,3-Dichlorobenzene	18.61	146	92254	0.92 ug/l	98
89)	1,4-Dichlorobenzene	18.70	146	92987	0.97 ug/l	99
90)	Benzyl Chloride	18.81	91	45717	0.93 ug/l	94
91)	n-Butylbenzene	18.91	91	183453	0.90 ug/l	98
92)	1,2-Dichlorobenzene	19.09	146	79070	0.96 ug/l	91
93)	1,2-Dibromo-3-chloropropan	19.91	157	3899	0.87 ug/l	84
94)	1,2,4-Trichlorobenzene	20.82	180	34115	0.86 ug/l	99
95)	Hexachlorobutadiene	20.91	225	25953	0.92 ug/l	99
96)	Naphthalene	21.19	128	53335	0.86 ug/l	96
97)	1,2,3-Trichlorobenzene	21.50	180	27693	0.89 ug/l	91

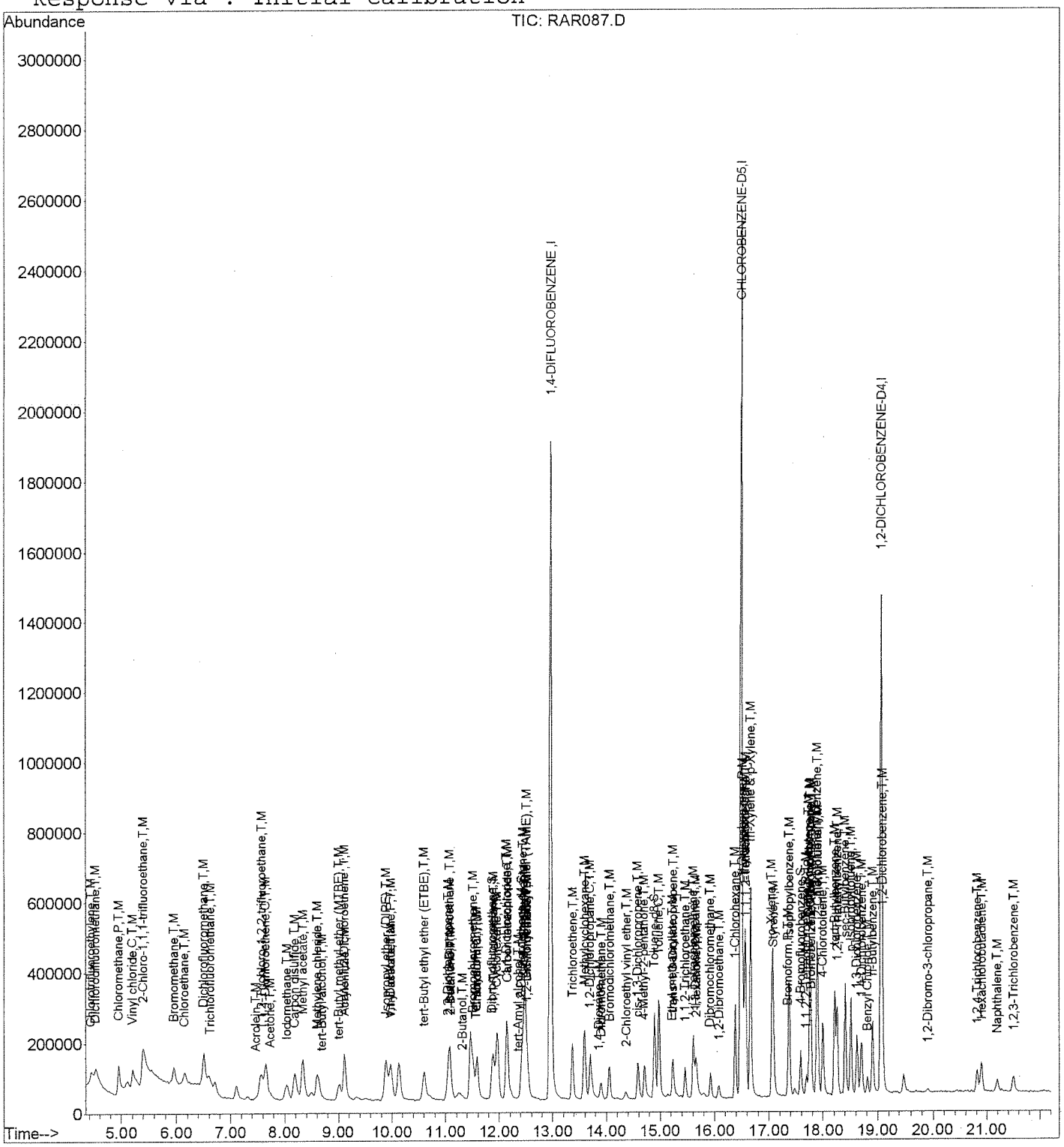
SU V28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR087.D Vial: 4
Acq On : 19 Jan 2016 8:08 pm Operator: ODinh
Sample : VOF3A193 Inst : F3
Misc : 1.0ppb 8260/5.0ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:12 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



SM 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR088.D
Acq On : 19 Jan 2016 8:36 pm
Sample : VOF3A194
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016

Vial: 5
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2371768	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1801474	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.07	152	503316	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.86	111	153159	1.98 ug/l	0.00
Spiked Amount 10.000			Recovery	= 19.80%	
40) 1,2-Dichloroethane-d4	12.41	65	103570	2.05 ug/l	0.00
Spiked Amount 10.000			Recovery	= 20.50%	
55) Toluene-d8	14.88	98	487471	1.94 ug/l	0.00
Spiked Amount 10.000			Recovery	= 19.40%	
75) 4-Bromofluorobenzene	17.58	95	143030	1.97 ug/l	0.00
Spiked Amount 10.000			Recovery	= 19.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.44	116	48645	1.62 ug/l	93
3) Dichlorodifluoromethane	4.53	85	213268	2.13 ug/l	99
4) Chloromethane	4.96	50	298665	2.25 ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	200914	2.05 ug/l	96
6) Vinyl chloride	5.21	62	235031	2.12 ug/l	100
7) Bromomethane	5.94	94	139603	2.04 ug/l	92
8) Chloroethane	6.15	64	132893	2.05 ug/l	97
9) Dichlorofluoromethane	6.49	67	357313	2.06 ug/l	98
10) Trichlorofluoromethane	6.61	101	230915	2.12 ug/l	100
11) Acrolein	7.46	56	23975	8.80 ug/l	85
12) 1,1,2-Trichloro-1,2,2-trif	7.57	151	100834	2.00 ug/l	99
13) 1,1-Dichloroethene	7.66	61	317213	2.13 ug/l	100
14) Acetone	7.73	43	88786	10.68 ug/l	99
15) Iodomethane	8.04	142	265592	1.95 ug/l	99
16) Methyl acetate	8.31	43	54276	1.85 ug/l	98
17) Carbon disulfide	8.18	76	580369	1.97 ug/l	99
18) Methylene chloride	8.60	49	233279	1.96 ug/l	99
19) tert-Butyl alcohol	8.70	59	29432	9.85 ug/l	93
20) tert-Butyl methyl ether (M	9.00	73	216546	2.04 ug/l	99
21) trans-1,2-Dichloroethene	9.10	61	266945	1.95 ug/l	100
22) Acrylonitrile	9.12	53	101592	9.26 ug/l	94
23) Isopropyl ether (DIPE)	9.88	45	578190	1.99 ug/l	100
24) 1,1-Dichloroethane	9.97	63	335887	2.02 ug/l	100
25) Vinyl acetate	9.98	86	13118	1.83 ug/l #	76
26) tert-Butyl ethyl ether (ET	10.59	59	350739	2.01 ug/l	100
27) 2,2-Dichloropropane	11.04	77	157289	2.03 ug/l	99
28) cis-1,2-Dichloroethene	11.07	96	180239	1.99 ug/l	99

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

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR088.D
Acq On : 19 Jan 2016 8:36 pm
Sample : VOF3A194
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016

Vial: 5
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	2-Butanone	11.07	43	142318	10.16 ug/l	100
30)	2-Butanol	11.31	45	17703	7.00 ug/l	77
31)	Bromochloromethane	11.51	128	62499	1.95 ug/l	97
32)	Tetrahydrofuran	11.56	42	21395	1.97 ug/l	99
33)	Chloroform	11.59	83	280678	2.01 ug/l	99
35)	1,1,1-Trichloroethane	11.89	97	214761	2.04 ug/l	99
36)	Cyclohexane	11.96	56	370934	2.05 ug/l	98
37)	1,1-Dichloropropene	12.14	110	83219	1.96 ug/l	98
38)	Carbon tetrachloride	12.16	119	195166	2.03 ug/l	100
39)	tert-Amyl alcohol	12.35	59	20092	10.06 ug/l	86
41)	2,2,4-Trimethylpentane	12.44	57	627792	2.13 ug/l	99
42)	Benzene	12.48	78	628791	1.97 ug/l	99
43)	1,2-Dichloroethane	12.53	62	136803	2.10 ug/l	99
44)	tert-Amyl methyl ether (TA	12.50	87	50677	2.03 ug/l	91
45)	Trichloroethene	13.36	130	168546	1.93 ug/l	98
46)	Methylcyclohexane	13.59	83	255721	2.03 ug/l	99
47)	1,2-Dichloropropane	13.69	63	159170	2.03 ug/l	96
48)	1,4-Dioxane	13.85	88	9319	37.13 ug/l	64
49)	Dibromomethane	13.90	93	62404	1.98 ug/l	100
50)	Bromodichloromethane	14.05	83	187895	2.00 ug/l	99
51)	2-Chloroethyl vinyl ether	14.34	63	36095	1.97 ug/l	100
52)	cis-1,3-Dichloropropene	14.58	75	203041	1.99 ug/l	98
53)	4-Methyl-2-pentanone	14.70	43	332379	10.17 ug/l	99
56)	Toluene	14.97	91	620155	1.95 ug/l	99
57)	Ethyl methacrylate	15.21	69	91577	1.96 ug/l	96
58)	trans-1,3-Dichloropropene	15.22	75	140666	1.96 ug/l	98
59)	1,1,2-Trichloroethane	15.46	97	79581	2.04 ug/l	98
60)	Tetrachloroethene	15.60	164	111622	1.96 ug/l	98
61)	2-Hexanone	15.66	43	207685	10.21 ug/l	98
62)	1,3-Dichloropropane	15.64	76	145712	2.04 ug/l	97
63)	Dibromochloromethane	15.92	129	107126	2.00 ug/l	99
64)	1,2-Dibromoethane	16.07	107	79253	2.00 ug/l	98
65)	1-Chlorohexane	16.39	91	246140	2.02 ug/l	99
66)	Chlorobenzene	16.52	112	370777	1.95 ug/l	95
67)	Ethylbenzene	16.56	91	667687	1.96 ug/l	99
68)	1,1,1,2-Tetrachloroethane	16.58	131	119060	1.99 ug/l #	69
69)	m-Xylene & p-Xylene	16.65	91	1017809	4.07 ug/l	100
70)	o-Xylene	17.06	91	496382	2.01 ug/l	99
71)	Styrene	17.07	104	363797	1.95 ug/l	97
73)	Bromoform	17.35	173	47579	2.04 ug/l	97
74)	Isopropylbenzene	17.37	105	666499	2.03 ug/l	99

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

SH 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR088.D
Vial: 5
Acq On : 19 Jan 2016 8:36 pm
Operator: ODinh
Sample : VOF3A194
Inst : F3
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	90183	2.14 ug/l	100
77)	trans-1,4-Dichloro-2-buten	17.73	53	19824	1.95 ug/l	95
78)	n-Propylbenzene	17.74	91	746832	1.99 ug/l	99
79)	1,2,3-Trichloropropane	17.76	110	21289	2.13 ug/l	94
80)	Bromobenzene	17.77	156	110476	2.01 ug/l	95
81)	1,3,5-Trimethylbenzene	17.88	105	469823	1.96 ug/l	100
82)	2-Chlorotoluene	17.89	91	456948	1.98 ug/l	99
83)	4-Chlorotoluene	17.99	91	390895	2.00 ug/l	99
84)	tert-Butylbenzene	18.20	134	98304	1.96 ug/l	98
85)	1,2,4-Trimethylbenzene	18.25	105	442798	1.99 ug/l	100
86)	sec-Butylbenzene	18.40	105	656100	2.03 ug/l	99
87)	p-Isopropyltoluene	18.50	119	464354	1.99 ug/l	99
88)	1,3-Dichlorobenzene	18.62	146	203017	1.98 ug/l	99
89)	1,4-Dichlorobenzene	18.69	146	191666	1.96 ug/l	98
90)	Benzyl Chloride	18.81	91	98476	1.95 ug/l	97
91)	n-Butylbenzene	18.90	91	408467	1.96 ug/l	98
92)	1,2-Dichlorobenzene	19.08	146	165367	1.96 ug/l	96
93)	1,2-Dibromo-3-chloropropan	19.90	157	9301	2.03 ug/l #	79
94)	1,2,4-Trichlorobenzene	20.81	180	74256	1.82 ug/l	99
95)	Hexachlorobutadiene	20.90	225	57271	1.98 ug/l	98
96)	Naphthalene	21.18	128	110721	1.75 ug/l	99
97)	1,2,3-Trichlorobenzene	21.49	180	56926	1.79 ug/l	99

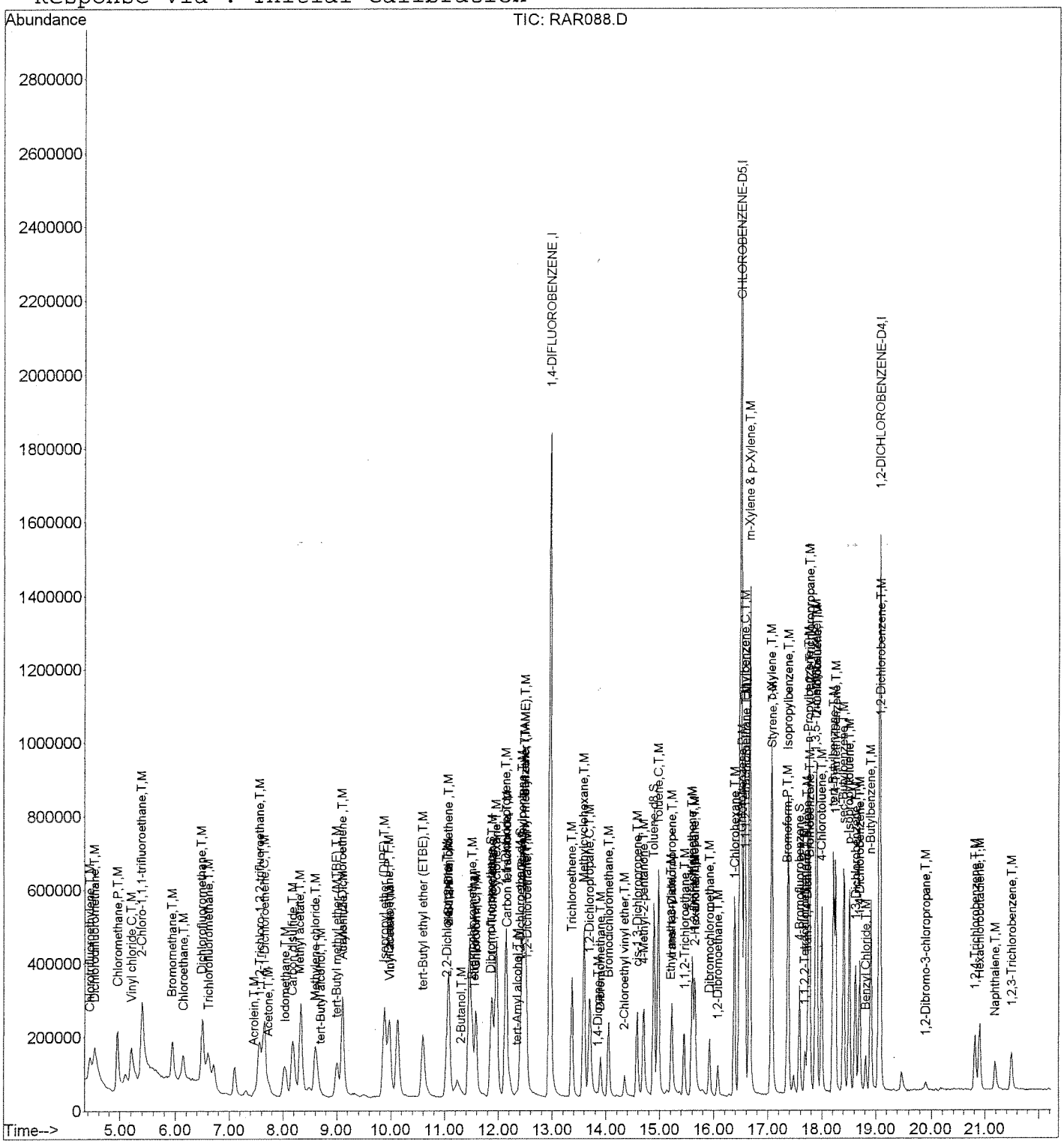
Su 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR088.D Vial: 5
Acq On : 19 Jan 2016 8:36 pm Operator: ODinh
Sample : VOF3A194 Inst : F3
Misc : 2.0ppb 8260/10ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



SG 4/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR089.D
Acq On : 19 Jan 2016 9:04 pm
Sample : VOF3A195
Misc : 5.0ppb 8260/25ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016

Vial: 6
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2369728	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1821322	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	557615	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.85	111	381214	4.94 ug/l	0.00
Spiked Amount 10.000			Recovery	= 49.40%	
40) 1,2-Dichloroethane-d4	12.40	65	254406	5.04 ug/l	0.00
Spiked Amount 10.000			Recovery	= 50.40%	
55) Toluene-d8	14.88	98	1245218	4.89 ug/l	0.00
Spiked Amount 10.000			Recovery	= 48.90%	
75) 4-Bromofluorobenzene	17.57	95	384417	4.79 ug/l	0.00
Spiked Amount 10.000			Recovery	= 47.90%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.43	116	153952	3.61 ug/l	92
3) Dichlorodifluoromethane	4.52	85	523066	5.23 ug/l	98
4) Chloromethane	4.96	50	684082	5.16 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	493745	5.04 ug/l	98
6) Vinyl chloride	5.21	62	575294	5.19 ug/l	99
7) Bromomethane	5.95	94	351980	5.15 ug/l	99
8) Chloroethane	6.15	64	334259	5.15 ug/l	99
9) Dichlorofluoromethane	6.51	67	876040	5.05 ug/l	99
10) Trichlorofluoromethane	6.61	101	564323	5.19 ug/l	99
11) Acrolein	7.46	56	67798	24.91 ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	7.56	151	250286	4.98 ug/l	100
13) 1,1-Dichloroethene	7.65	61	762396	5.13 ug/l	99
14) Acetone	7.74	43	217547	26.19 ug/l	99
15) Iodomethane	8.04	142	664309	4.87 ug/l	99
16) Methyl acetate	8.31	43	162920	5.55 ug/l	94
17) Carbon disulfide	8.17	76	1453370	4.95 ug/l	99
18) Methylene chloride	8.59	49	586451	4.93 ug/l	99
19) tert-Butyl alcohol	8.68	59	74422	24.94 ug/l #	40
20) tert-Butyl methyl ether (M	9.01	73	539055	5.08 ug/l	99
21) trans-1,2-Dichloroethene	9.10	61	681288	4.99 ug/l	99
22) Acrylonitrile	9.10	53	275469	25.12 ug/l	95
23) Isopropyl ether (DIPE)	9.87	45	1506779	5.19 ug/l	100
24) 1,1-Dichloroethane	9.96	63	820430	4.95 ug/l	99
25) Vinyl acetate	9.95	86	39321	5.49 ug/l #	51
26) tert-Butyl ethyl ether (ET	10.60	59	882559	5.06 ug/l	99
27) 2,2-Dichloropropane	11.05	77	385392	4.99 ug/l	99
28) cis-1,2-Dichloroethene	11.06	96	439102	4.85 ug/l	100

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

SG 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR089.D
Acq On : 19 Jan 2016 9:04 pm
Sample : VOF3A195
Misc : 5.0ppb 8260/25ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016

Vial: 6
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	2-Butanone	11.05	43	380179	27.17 ug/l	100
30)	2-Butanol	11.29	45	55526	21.99 ug/l	97
31)	Bromochloromethane	11.51	128	155329	4.85 ug/l	97
32)	Tetrahydrofuran	11.56	42	49705	4.58 ug/l	95
33)	Chloroform	11.58	83	686659	4.91 ug/l	99
35)	1,1,1-Trichloroethane	11.88	97	525082	4.98 ug/l	98
36)	Cyclohexane	11.96	56	926987	5.13 ug/l	100
37)	1,1-Dichloropropene	12.14	110	204096	4.80 ug/l	100
38)	Carbon tetrachloride	12.14	119	472963	4.93 ug/l	100
39)	tert-Amyl alcohol	12.34	59	50463	25.28 ug/l	94
41)	2,2,4-Trimethylpentane	12.43	57	1533324	5.21 ug/l	99
42)	Benzene	12.48	78	1548156	4.85 ug/l	99
43)	1,2-Dichloroethane	12.52	62	333820	5.14 ug/l	99
44)	tert-Amyl methyl ether (TA	12.49	87	124496	4.98 ug/l	96
45)	Trichloroethene	13.36	130	410958	4.72 ug/l	99
46)	Methylcyclohexane	13.58	83	629271	5.01 ug/l	99
47)	1,2-Dichloropropane	13.69	63	388748	4.96 ug/l	97
48)	1,4-Dioxane	13.85	88	23512	93.75 ug/l	81
49)	Dibromomethane	13.89	93	162006	5.13 ug/l	99
50)	Bromodichloromethane	14.04	83	471758	5.02 ug/l	100
51)	2-Chloroethyl vinyl ether	14.34	63	87801	4.81 ug/l	100
52)	cis-1,3-Dichloropropene	14.58	75	519859	5.10 ug/l	99
53)	4-Methyl-2-pentanone	14.68	43	876402	26.84 ug/l	100
56)	Toluene	14.97	91	1520746	4.73 ug/l	100
57)	Ethyl methacrylate	15.20	69	237384	5.02 ug/l	99
58)	trans-1,3-Dichloropropene	15.22	75	366900	5.06 ug/l	98
59)	1,1,2-Trichloroethane	15.46	97	197716	5.02 ug/l	98
60)	Tetrachloroethene	15.59	164	272628	4.74 ug/l	98
61)	2-Hexanone	15.64	43	560832	27.28 ug/l	98
62)	1,3-Dichloropropane	15.64	76	365222	5.06 ug/l	98
63)	Dibromochloromethane	15.92	129	268980	4.96 ug/l	100
64)	1,2-Dibromoethane	16.07	107	207935	5.18 ug/l	100
65)	1-Chlorohexane	16.38	91	617742	5.00 ug/l	99
66)	Chlorobenzene	16.52	112	940550	4.88 ug/l	98
67)	Ethylbenzene	16.56	91	1733320	5.05 ug/l	99
68)	1,1,1,2-Tetrachloroethane	16.57	131	302405	5.01 ug/l	98
69)	m-Xylene & p-Xylene	16.65	91	2551175	10.10 ug/l	99
70)	o-Xylene	17.05	91	1274294	5.10 ug/l	100
71)	Styrene	17.07	104	960825	5.10 ug/l	99
73)	Bromoform	17.35	173	121108	4.68 ug/l	99
74)	Isopropylbenzene	17.36	105	1667914	4.58 ug/l	99

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

SU 1/27/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR089.D
Acq On : 19 Jan 2016 9:04 pm
Sample : VOF3A195
Misc : 5.0ppb 8260/25ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016

Vial: 6
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	225063	4.83 ug/l	100
77)	trans-1,4-Dichloro-2-buten	17.72	53	51063	4.54 ug/l	99
78)	n-Propylbenzene	17.74	91	1941500	4.67 ug/l	99
79)	1,2,3-Trichloropropane	17.75	110	53575	4.85 ug/l	98
80)	Bromobenzene	17.77	156	285728	4.68 ug/l	99
81)	1,3,5-Trimethylbenzene	17.87	105	1262331	4.75 ug/l	100
82)	2-Chlorotoluene	17.90	91	1192221	4.67 ug/l	98
83)	4-Chlorotoluene	17.99	91	1045366	4.83 ug/l	100
84)	tert-Butylbenzene	18.20	134	262344	4.72 ug/l	97
85)	1,2,4-Trimethylbenzene	18.24	105	1183948	4.81 ug/l	100
86)	sec-Butylbenzene	18.41	105	1721064	4.81 ug/l	99
87)	p-Isopropyltoluene	18.51	119	1264615	4.89 ug/l	99
88)	1,3-Dichlorobenzene	18.62	146	542428	4.78 ug/l	99
89)	1,4-Dichlorobenzene	18.69	146	505359	4.66 ug/l	98
90)	Benzyl Chloride	18.81	91	271906	4.86 ug/l	100
91)	n-Butylbenzene	18.90	91	1164359	5.05 ug/l	99
92)	1,2-Dichlorobenzene	19.08	146	453174	4.84 ug/l	99
93)	1,2-Dibromo-3-chloropropan	19.90	157	25362	5.00 ug/l	88
94)	1,2,4-Trichlorobenzene	20.81	180	212857	4.71 ug/l	100
95)	Hexachlorobutadiene	20.89	225	159259	4.96 ug/l	99
96)	Naphthalene	21.18	128	314786	4.49 ug/l	99
97)	1,2,3-Trichlorobenzene	21.49	180	169943	4.82 ug/l	99

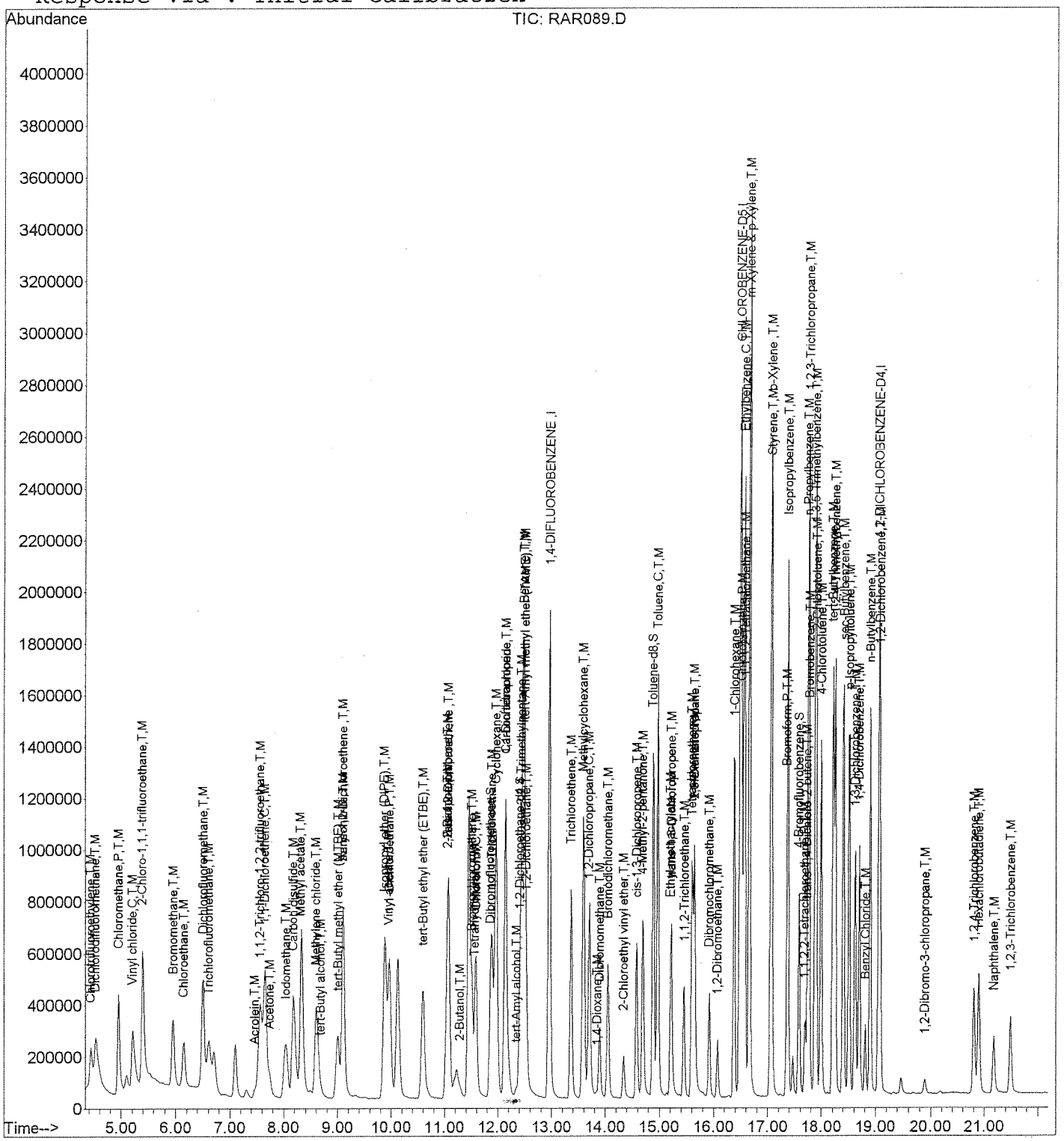
SU 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR089.D Vial: 6
Acq On : 19 Jan 2016 9:04 pm Operator: ODinh
Sample : VOF3A195 Inst : F3
Misc : 5.0ppb 8260/25ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:14 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



SM 4/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR090.D Vial: 7
Acq On : 19 Jan 2016 9:32 pm Operator: ODinh
Sample : VOF3A196 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2552086	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1952108	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	540704	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.85	111	867510	10.43 ug/l	0.00
Spiked Amount 10.000			Recovery =	104.30%	
40) 1,2-Dichloroethane-d4	12.40	65	561913	10.34 ug/l	0.00
Spiked Amount 10.000			Recovery =	103.40%	
55) Toluene-d8	14.88	98	2864428	10.50 ug/l	0.00
Spiked Amount 10.000			Recovery =	105.00%	
75) 4-Bromofluorobenzene	17.57	95	830771	10.66 ug/l	0.00
Spiked Amount 10.000			Recovery =	106.60%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.44	116	426606	8.19 ug/l	100
3) Dichlorodifluoromethane	4.52	85	1060367	9.85 ug/l	100
4) Chloromethane	4.96	50	1419819	9.95 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	1032475	9.79 ug/l	100
6) Vinyl chloride	5.22	62	1181012	9.89 ug/l	100
7) Bromomethane	5.95	94	738255	10.04 ug/l	100
8) Chloroethane	6.15	64	671632	9.62 ug/l	100
9) Dichlorofluoromethane	6.51	67	1773624	9.49 ug/l	100
10) Trichlorofluoromethane	6.61	101	1159471	9.91 ug/l	100
11) Acrolein	7.46	56	148510	50.66 ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	7.56	151	506789	9.36 ug/l	100
13) 1,1-Dichloroethene	7.65	61	1574500	9.83 ug/l	100
14) Acetone	7.73	43	470884	52.64 ug/l	100
15) Iodomethane	8.04	142	1424525	9.70 ug/l	100
16) Methyl acetate	8.31	43	339004	10.72 ug/l	100
17) Carbon disulfide	8.17	76	3135264	9.91 ug/l	100
18) Methylene chloride	8.59	49	1238090	9.66 ug/l	100
19) tert-Butyl alcohol	8.68	59	155730	48.46 ug/l	100
20) tert-Butyl methyl ether (M	8.99	73	1190997	10.42 ug/l	100
21) trans-1,2-Dichloroethene	9.10	61	1507780	10.25 ug/l	100
22) Acrylonitrile	9.10	53	644830	54.61 ug/l	100
23) Isopropyl ether (DIPE)	9.87	45	3357113	10.74 ug/l	100
24) 1,1-Dichloroethane	9.96	63	1834939	10.27 ug/l	100
25) Vinyl acetate	9.95	86	79975	10.37 ug/l	100
26) tert-Butyl ethyl ether (ET	10.59	59	1945726	10.35 ug/l	100
27) 2,2-Dichloropropane	11.03	77	853174	10.25 ug/l	100
28) cis-1,2-Dichloroethene	11.06	96	998920	10.25 ug/l	100

(#) = qualifier out of range (m) = manual integration
RAR090.D VOF3A19.M Wed Jan 27 16:18:23 2016 SY 1/28/16 Page 1

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR090.D
Acq On : 19 Jan 2016 9:32 pm
Sample : VOF3A196
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 7
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	11.03	43	853149	56.60 ug/l	100
30) 2-Butanol	11.27	45	128606	47.29 ug/l	100
31) Bromochloromethane	11.51	128	357293	10.35 ug/l	100
32) Tetrahydrofuran	11.56	42	110963	9.49 ug/l	100
33) Chloroform	11.59	83	1568118	10.41 ug/l	100
35) 1,1,1-Trichloroethane	11.88	97	1192337	10.51 ug/l	100
36) Cyclohexane	11.96	56	2027039	10.41 ug/l	100
37) 1,1-Dichloropropene	12.14	110	472673	10.32 ug/l	100
38) Carbon tetrachloride	12.14	119	1095855	10.60 ug/l	100
39) tert-Amyl alcohol	12.33	59	107236	49.88 ug/l	100
41) 2,2,4-Trimethylpentane	12.43	57	3296754	10.40 ug/l	100
42) Benzene	12.46	78	3478767	10.12 ug/l	100
43) 1,2-Dichloroethane	12.52	62	724347	10.35 ug/l	100
44) tert-Amyl methyl ether (TA	12.49	87	270075	10.04 ug/l	100
45) Trichloroethene	13.36	130	943386	10.06 ug/l	100
46) Methylcyclohexane	13.58	83	1444266	10.68 ug/l	100
47) 1,2-Dichloropropane	13.69	63	882671	10.45 ug/l	100
48) 1,4-Dioxane	13.85	88	51679	191.35 ug/l	100
49) Dibromomethane	13.89	93	356384	10.49 ug/l	100
50) Bromodichloromethane	14.04	83	1039158	10.27 ug/l	100
51) 2-Chloroethyl vinyl ether	14.33	63	197015	10.01 ug/l	100
52) cis-1,3-Dichloropropene	14.56	75	1166099	10.63 ug/l	100
53) 4-Methyl-2-pentanone	14.68	43	1911380	54.35 ug/l	100
56) Toluene	14.97	91	3420096	9.92 ug/l	100
57) Ethyl methacrylate	15.20	69	515328	10.16 ug/l	100
58) trans-1,3-Dichloropropene	15.22	75	821781	10.57 ug/l	100
59) 1,1,2-Trichloroethane	15.44	97	438756	10.40 ug/l	100
60) Tetrachloroethene	15.59	164	634558	10.29 ug/l	100
61) 2-Hexanone	15.64	43	1190783	54.04 ug/l	100
62) 1,3-Dichloropropane	15.64	76	809443	10.45 ug/l	100
63) Dibromochloromethane	15.92	129	591383	10.18 ug/l	100
64) 1,2-Dibromoethane	16.07	107	443443	10.31 ug/l	100
65) 1-Chlorohexane	16.37	91	1384479	10.46 ug/l	100
66) Chlorobenzene	16.52	112	2102506	10.19 ug/l	100
67) Ethylbenzene	16.56	91	3869836	10.51 ug/l	100
68) 1,1,1,2-Tetrachloroethane	16.58	131	661113	10.22 ug/l	100
69) m-Xylene & p-Xylene	16.65	91	5750632	21.23 ug/l	100
70) o-Xylene	17.05	91	2737788	10.21 ug/l	100
71) Styrene	17.07	104	2094265	10.38 ug/l	100
73) Bromoform	17.35	173	262081	10.45 ug/l	100
74) Isopropylbenzene	17.36	105	3624912	10.27 ug/l	100

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

SY 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR090.D
Acq On : 19 Jan 2016 9:32 pm
Sample : VOF3A196
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 7
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	460503	10.18 ug/l	100
77)	trans-1,4-Dichloro-2-buten	17.72	53	105869	9.70 ug/l	100
78)	n-Propylbenzene	17.74	91	4271482	10.61 ug/l	100
79)	1,2,3-Trichloropropane	17.75	110	109695	10.23 ug/l	100
80)	Bromobenzene	17.77	156	605280	10.23 ug/l	100
81)	1,3,5-Trimethylbenzene	17.87	105	2662096	10.34 ug/l	100
82)	2-Chlorotoluene	17.90	91	2529848	10.23 ug/l	100
83)	4-Chlorotoluene	17.99	91	2211732	10.55 ug/l	100
84)	tert-Butylbenzene	18.20	134	537794	9.99 ug/l	100
85)	1,2,4-Trimethylbenzene	18.24	105	2535351	10.63 ug/l	100
86)	sec-Butylbenzene	18.41	105	3610425	10.40 ug/l	100
87)	p-Isopropyltoluene	18.51	119	2699098	10.76 ug/l	100
88)	1,3-Dichlorobenzene	18.62	146	1122856	10.21 ug/l	100
89)	1,4-Dichlorobenzene	18.69	146	1094470	10.40 ug/l	100
90)	Benzyl Chloride	18.81	91	560368	10.33 ug/l	100
91)	n-Butylbenzene	18.90	91	2438099	10.91 ug/l	100
92)	1,2-Dichlorobenzene	19.08	146	917077	10.09 ug/l	100
93)	1,2-Dibromo-3-chloropropan	19.90	157	51438	10.45 ug/l	100
94)	1,2,4-Trichlorobenzene	20.81	180	455272	10.40 ug/l	100
95)	Hexachlorobutadiene	20.90	225	337700	10.85 ug/l	100
96)	Naphthalene	21.18	128	665318	9.78 ug/l	100
97)	1,2,3-Trichlorobenzene	21.49	180	352871	10.33 ug/l	100

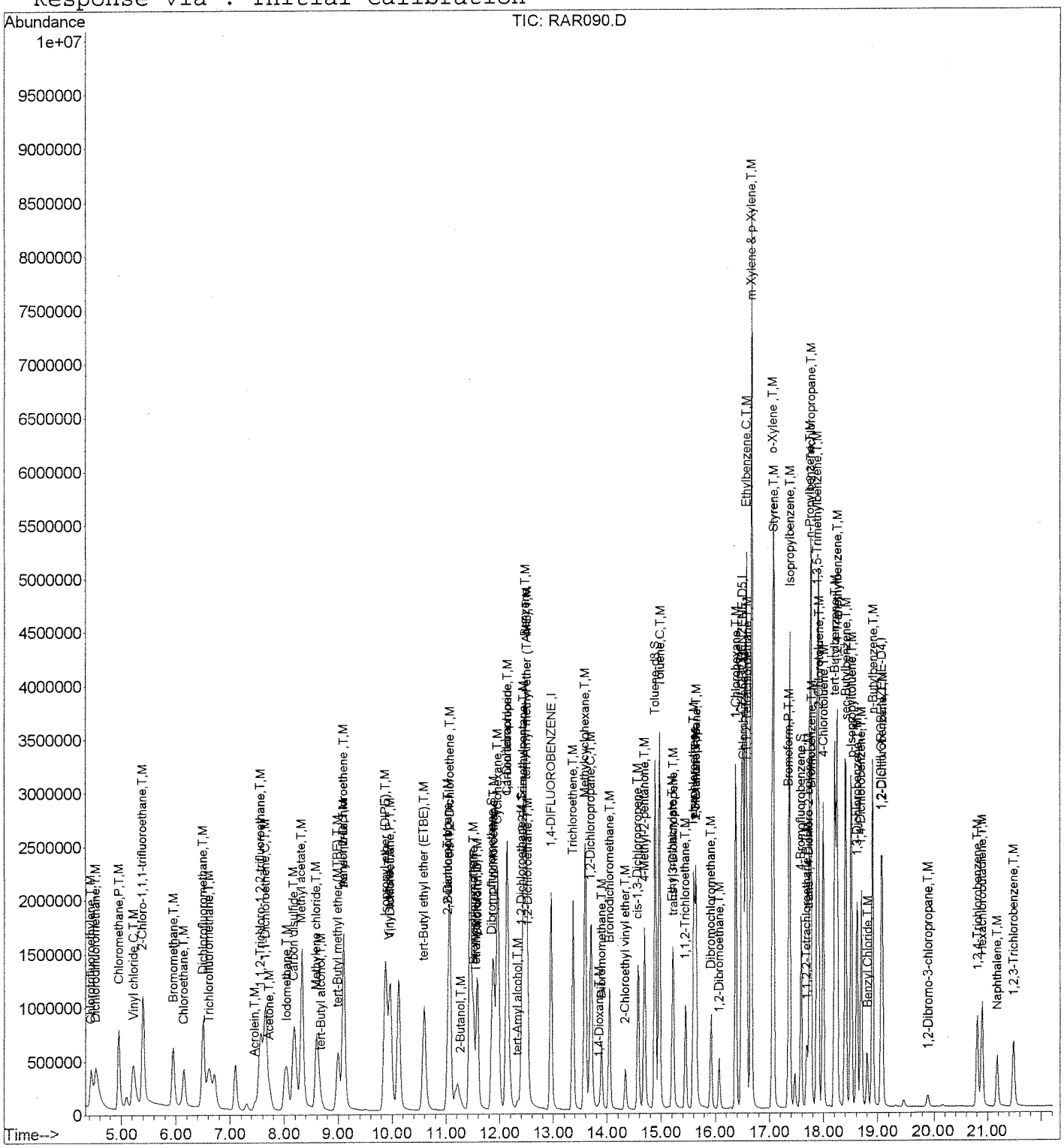
SU 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR090.D Vial: 7
Acq On : 19 Jan 2016 9:32 pm Operator: ODinh
Sample : VOF3A196 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR091.D
Acq On : 19 Jan 2016 10:00 pm
Sample : VOF3A197
Misc : 20ppb 8260/100ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 8
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.95	114	2446809	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.48	117	1931766	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.07	152	564921	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.86	111	1620036	20.31 ug/l	0.00
Spiked Amount 10.000			Recovery =	203.10%	
40) 1,2-Dichloroethane-d4	12.39	65	1020949	19.59 ug/l	0.00
Spiked Amount 10.000			Recovery =	195.90%	
55) Toluene-d8	14.88	98	5351660	19.83 ug/l	0.00
Spiked Amount 10.000			Recovery =	198.30%	
75) 4-Bromofluorobenzene	17.58	95	1608072	19.76 ug/l	0.00
Spiked Amount 10.000			Recovery =	197.60%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.44	116	1023584	19.45 ug/l	99
3) Dichlorodifluoromethane	4.53	85	2126483	20.61 ug/l	100
4) Chloromethane	4.95	50	2784817	20.35 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	2132489	21.09 ug/l	99
6) Vinyl chloride	5.21	62	2386040	20.84 ug/l	100
7) Bromomethane	5.94	94	1508241	21.39 ug/l	99
8) Chloroethane	6.14	64	1406591	21.01 ug/l	99
9) Dichlorofluoromethane	6.50	67	3475562	19.39 ug/l	100
10) Trichlorofluoromethane	6.62	101	2295554	20.46 ug/l	100
11) Acrolein	7.45	56	298818	106.33 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.57	151	1023039	19.70 ug/l	99
13) 1,1-Dichloroethene	7.64	61	3007154	19.59 ug/l	99
14) Acetone	7.73	43	878833	102.46 ug/l	99
15) Iodomethane	8.03	142	2779429	19.75 ug/l	100
16) Methyl acetate	8.30	43	622768	20.53 ug/l	99
17) Carbon disulfide	8.18	76	6219318	20.50 ug/l	100
18) Methylene chloride	8.60	49	2330497	18.97 ug/l	98
19) tert-Butyl alcohol	8.67	59	312104	101.30 ug/l #	46
20) tert-Butyl methyl ether (M	9.00	73	2183096	19.91 ug/l	99
21) trans-1,2-Dichloroethene	9.09	61	2795063	19.83 ug/l	99
22) Acrylonitrile	9.09	53	1261868	111.46 ug/l	98
23) Isopropyl ether (DIPE)	9.88	45	6140778	20.49 ug/l	100
24) 1,1-Dichloroethane	9.97	63	3372236	19.69 ug/l	100
25) Vinyl acetate	9.94	86	148872	20.14 ug/l #	78
26) tert-Butyl ethyl ether (ET	10.59	59	3626420	20.13 ug/l	99
27) 2,2-Dichloropropane	11.04	77	1478946	18.54 ug/l	99
28) cis-1,2-Dichloroethene	11.07	96	1810689	19.38 ug/l	99

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

SM 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR091.D
Acq On : 19 Jan 2016 10:00 pm
Sample : VOF3A197
Misc : 20ppb 8260/100ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 8
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	2-Butanone	11.04	43	1635598	113.19 ug/l	99
30)	2-Butanol	11.26	45	270124	103.60 ug/l	97
31)	Bromochloromethane	11.50	128	657651	19.87 ug/l	99
32)	Tetrahydrofuran	11.55	42	204235	18.23 ug/l	98
33)	Chloroform	11.58	83	2847914	19.72 ug/l	99
35)	1,1,1-Trichloroethane	11.89	97	2177723	20.02 ug/l	100
36)	Cyclohexane	11.96	56	4043352	21.66 ug/l	99
37)	1,1-Dichloropropene	12.13	110	877014	19.98 ug/l	99
38)	Carbon tetrachloride	12.14	119	2006481	20.24 ug/l	100
39)	tert-Amyl alcohol	12.34	59	212537	103.11 ug/l	94
41)	2,2,4-Trimethylpentane	12.44	57	6172309	20.31 ug/l	99
42)	Benzene	12.47	78	6522797	19.80 ug/l	99
43)	1,2-Dichloroethane	12.51	62	1304499	19.45 ug/l	99
44)	tert-Amyl methyl ether (TA	12.50	87	519447	20.14 ug/l	94
45)	Trichloroethene	13.36	130	1769956	19.69 ug/l	98
46)	Methylcyclohexane	13.59	83	2850777	21.99 ug/l	99
47)	1,2-Dichloropropane	13.69	63	1615820	19.95 ug/l	98
48)	1,4-Dioxane	13.84	88	104592	403.92 ug/l	91
49)	Dibromomethane	13.88	93	654979	20.10 ug/l	98
50)	Bromodichloromethane	14.03	83	1912142	19.72 ug/l	100
51)	2-Chloroethyl vinyl ether	14.33	63	372090	19.73 ug/l	99
52)	cis-1,3-Dichloropropene	14.57	75	2152281	20.47 ug/l	99
53)	4-Methyl-2-pentanone	14.69	43	3699551	109.72 ug/l	99
56)	Toluene	14.96	91	6551719	19.20 ug/l	100
57)	Ethyl methacrylate	15.20	69	962840	19.18 ug/l	99
58)	trans-1,3-Dichloropropene	15.21	75	1523518	19.81 ug/l	99
59)	1,1,2-Trichloroethane	15.45	97	813808	19.49 ug/l	99
60)	Tetrachloroethene	15.60	164	1196625	19.61 ug/l	99
61)	2-Hexanone	15.63	43	2358091	108.14 ug/l	99
62)	1,3-Dichloropropane	15.64	76	1478272	19.29 ug/l	99
63)	Dibromochloromethane	15.91	129	1121740	19.51 ug/l	99
64)	1,2-Dibromoethane	16.06	107	855311	20.10 ug/l	99
65)	1-Chlorohexane	16.37	91	2658055	20.30 ug/l	99
66)	Chlorobenzene	16.51	112	4050967	19.83 ug/l	97
67)	Ethylbenzene	16.55	91	7231819	19.85 ug/l	100
68)	1,1,1,2-Tetrachloroethane	16.57	131	1247497	19.49 ug/l	99
69)	m-Xylene & p-Xylene	16.65	91	10634621	39.68 ug/l	99
70)	o-Xylene	17.06	91	5182156	19.54 ug/l	100
71)	Styrene	17.07	104	4101066	20.54 ug/l	99
73)	Bromoform	17.34	173	510267	19.47 ug/l	99
74)	Isopropylbenzene	17.37	105	7211656	19.55 ug/l	100

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

SU 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR091.D Vial: 8
Acq On : 19 Jan 2016 10:00 pm Operator: ODinh
Sample : VOF3A197 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	891507	18.87 ug/l	99
77)	trans-1,4-Dichloro-2-buten	17.71	53	217599	19.09 ug/l	100
78)	n-Propylbenzene	17.74	91	8460514	20.10 ug/l	100
79)	1,2,3-Trichloropropane	17.76	110	217480	19.41 ug/l	95
80)	Bromobenzene	17.76	156	1210959	19.59 ug/l	98
81)	1,3,5-Trimethylbenzene	17.88	105	5217997	19.40 ug/l	100
82)	2-Chlorotoluene	17.89	91	4861206	18.81 ug/l	99
83)	4-Chlorotoluene	17.98	91	4373459	19.96 ug/l	100
84)	tert-Butylbenzene	18.20	134	1121346	19.93 ug/l	96
85)	1,2,4-Trimethylbenzene	18.25	105	5011279	20.10 ug/l	99
86)	sec-Butylbenzene	18.40	105	7398044	20.39 ug/l	100
87)	p-Isopropyltoluene	18.50	119	5446138	20.79 ug/l	99
88)	1,3-Dichlorobenzene	18.61	146	2307940	20.08 ug/l	100
89)	1,4-Dichlorobenzene	18.70	146	2217321	20.17 ug/l	100
90)	Benzyl Chloride	18.80	91	1145229	20.21 ug/l	99
91)	n-Butylbenzene	18.90	91	5045757	21.61 ug/l	100
92)	1,2-Dichlorobenzene	19.08	146	1894611	19.96 ug/l	99
93)	1,2-Dibromo-3-chloropropan	19.89	157	106001	20.62 ug/l	97
94)	1,2,4-Trichlorobenzene	20.80	180	970963	21.22 ug/l	99
95)	Hexachlorobutadiene	20.90	225	685468	21.08 ug/l	99
96)	Naphthalene	21.17	128	1426036	20.06 ug/l	99
97)	1,2,3-Trichlorobenzene	21.48	180	733733	20.55 ug/l	100

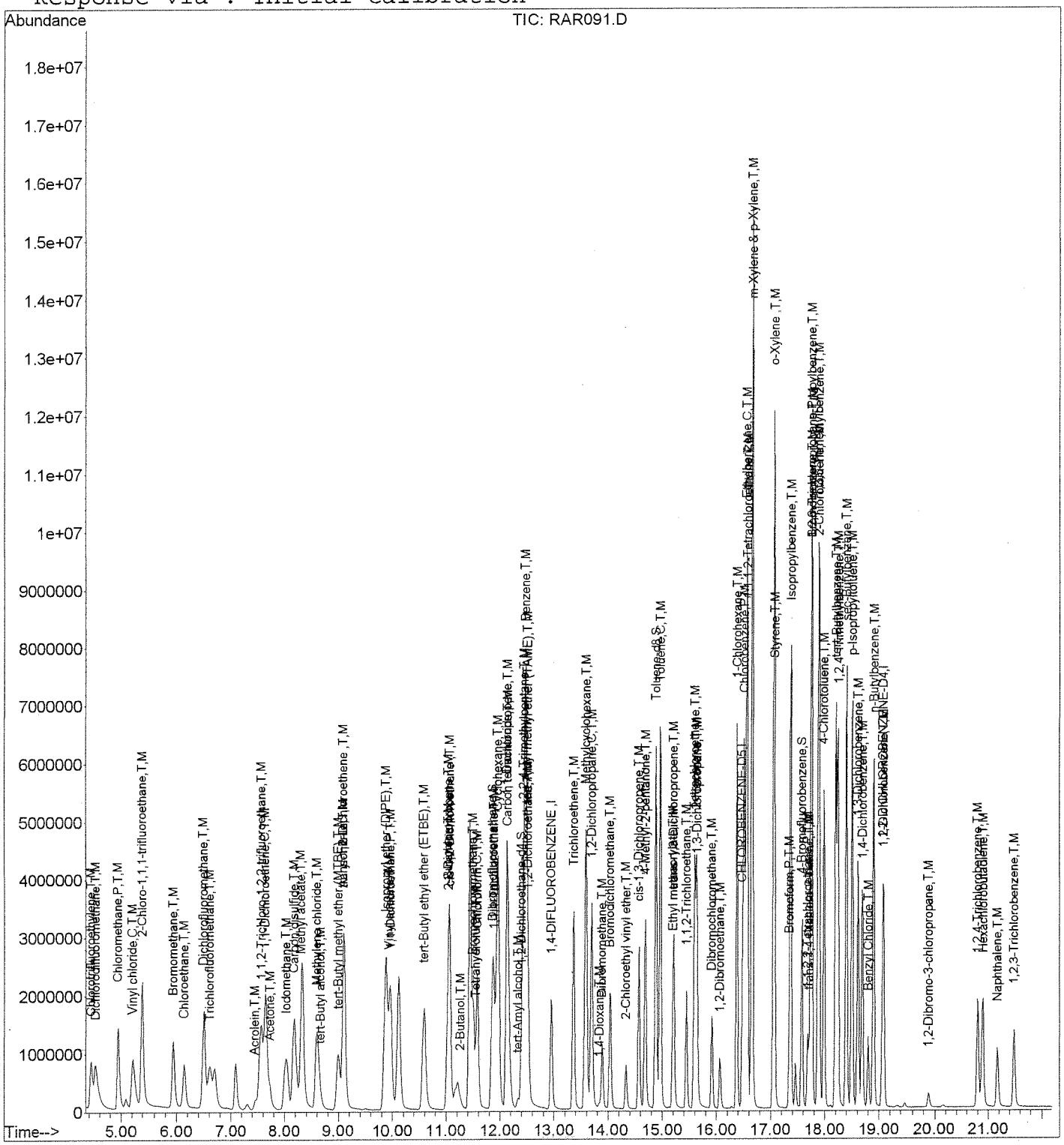
Sa 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR091.D Vial: 8
Acq On : 19 Jan 2016 10:00 pm Operator: ODinh
Sample : VOF3A197 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



Su 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR092.D
Acq On : 19 Jan 2016 10:28 pm
Sample : VOF3A198
Misc : 30ppb 8260/150ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 9
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.95	114	2404019	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	16.48	117	1839018	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	577967	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	11.85	111	2361496	30.14	ug/l	0.00
Spiked Amount 10.000			Recovery = 301.40%			
40) 1,2-Dichloroethane-d4	12.40	65	1467721	28.66	ug/l	0.00
Spiked Amount 10.000			Recovery = 286.60%			
55) Toluene-d8	14.88	98	7728028	30.07	ug/l	0.00
Spiked Amount 10.000			Recovery = 300.70%			
75) 4-Bromofluorobenzene	17.57	95	2296116	27.58	ug/l	0.00
Spiked Amount 10.000			Recovery = 275.80%			
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	4.43	116	1395803	26.73	ug/l	99
3) Dichlorodifluoromethane	4.52	85	2984135	29.43	ug/l	100
4) Chloromethane	4.96	50	3936125	29.28	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	3046593	30.67	ug/l	98
6) Vinyl chloride	5.21	62	3367874	29.94	ug/l	100
7) Bromomethane	5.94	94	2149318	31.02	ug/l	99
8) Chloroethane	6.13	64	1991001	30.27	ug/l	98
9) Dichlorofluoromethane	6.49	67	5029211	28.56	ug/l	99
10) Trichlorofluoromethane	6.61	101	3356382	30.44	ug/l	100
11) Acrolein	7.46	56	433879	157.13	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	7.56	151	1499935	29.40	ug/l	99
13) 1,1-Dichloroethene	7.65	61	4381716	29.05	ug/l	98
14) Acetone	7.73	43	1250653	148.41	ug/l	97
15) Iodomethane	8.04	142	4236703	30.64	ug/l	99
16) Methyl acetate	8.31	43	903474	30.32	ug/l	100
17) Carbon disulfide	8.17	76	8892970	29.84	ug/l	100
18) Methylene chloride	8.59	49	3398453	28.16	ug/l	96
19) tert-Butyl alcohol	8.68	59	464993	153.61	ug/l	96
20) tert-Butyl methyl ether (M	8.99	73	3290487	30.55	ug/l	100
21) trans-1,2-Dichloroethene	9.10	61	4015122	28.99	ug/l	97
22) Acrylonitrile	9.08	53	1793736	161.27	ug/l	99
23) Isopropyl ether (DIPE)	9.87	45	8942779	30.36	ug/l	98
24) 1,1-Dichloroethane	9.96	63	5049693	30.01	ug/l	99
25) Vinyl acetate	9.95	86	227958	31.39	ug/l #	85
26) tert-Butyl ethyl ether (ET	10.59	59	5444806	30.76	ug/l	99
27) 2,2-Dichloropropane	11.03	77	2085010	26.60	ug/l	99
28) cis-1,2-Dichloroethene	11.06	96	2725577	29.69	ug/l	97

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

SM 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR092.D
Acq On : 19 Jan 2016 10:28 pm
Sample : VOF3A198
Misc : 30ppb 8260/150ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 9
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	2-Butanone	11.03	43	2333574	164.36 ug/l	98
30)	2-Butanol	11.27	45	415034	162.01 ug/l	97
31)	Bromochloromethane	11.51	128	979749	30.13 ug/l	94
32)	Tetrahydrofuran	11.54	42	290155	26.36 ug/l	96
33)	Chloroform	11.58	83	4192230	29.55 ug/l	99
35)	1,1,1-Trichloroethane	11.88	97	3079886	28.81 ug/l	100
36)	Cyclohexane	11.96	56	5344303	29.14 ug/l	98
37)	1,1-Dichloropropene	12.12	110	1298110	30.10 ug/l	100
38)	Carbon tetrachloride	12.15	119	2887259	29.64 ug/l	100
39)	tert-Amyl alcohol	12.33	59	339488	167.63 ug/l	98
41)	2,2,4-Trimethylpentane	12.43	57	8905739	29.83 ug/l	99
42)	Benzene	12.48	78	9253450	28.59 ug/l	99
43)	1,2-Dichloroethane	12.52	62	1861502	28.25 ug/l	99
44)	tert-Amyl methyl ether (TA	12.49	87	761648	30.06 ug/l	94
45)	Trichloroethene	13.36	130	2613379	29.59 ug/l	98
46)	Methylcyclohexane	13.59	83	3799467	29.83 ug/l	98
47)	1,2-Dichloropropane	13.68	63	2375982	29.86 ug/l	100
48)	1,4-Dioxane	13.83	88	164748	647.57 ug/l	98
49)	Dibromomethane	13.89	93	981444	30.66 ug/l	97
50)	Bromodichloromethane	14.04	83	2819977	29.59 ug/l	99
51)	2-Chloroethyl vinyl ether	14.32	63	576004	31.08 ug/l	100
52)	cis-1,3-Dichloropropene	14.56	75	3197123	30.94 ug/l	98
53)	4-Methyl-2-pentanone	14.68	43	5123626	154.67 ug/l	98
56)	Toluene	14.97	91	9334562	28.74 ug/l	100
57)	Ethyl methacrylate	15.19	69	1450235	30.35 ug/l	98
58)	trans-1,3-Dichloropropene	15.22	75	2283373	31.18 ug/l	98
59)	1,1,2-Trichloroethane	15.44	97	1204759	30.31 ug/l	99
60)	Tetrachloroethene	15.59	164	1750187	30.13 ug/l	100
61)	2-Hexanone	15.62	43	3342411	161.01 ug/l	99
62)	1,3-Dichloropropane	15.64	76	2158100	29.58 ug/l	100
63)	Dibromochloromethane	15.92	129	1670180	30.52 ug/l	99
64)	1,2-Dibromoethane	16.07	107	1266177	31.25 ug/l	100
65)	1-Chlorohexane	16.38	91	3772653	30.27 ug/l	98
66)	Chlorobenzene	16.51	112	5914697	30.42 ug/l	97
67)	Ethylbenzene	16.56	91	10434271	30.08 ug/l	100
68)	1,1,1,2-Tetrachloroethane	16.57	131	1826324	29.97 ug/l	99
69)	m-Xylene & p-Xylene	16.65	91	14301422	56.05 ug/l	94
70)	o-Xylene	17.05	91	7500396	29.71 ug/l	99
71)	Styrene	17.07	104	6021168	31.68 ug/l	98
73)	Bromoform	17.35	173	759482	28.33 ug/l	100
74)	Isopropylbenzene	17.36	105	10210838	27.05 ug/l	100

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

SAY 2/8/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR092.D
Acq On : 19 Jan 2016 10:28 pm
Sample : VOF3A198
Misc : 30ppb 8260/150ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 9
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	1314803	27.20 ug/l	99
77)	trans-1,4-Dichloro-2-buten	17.71	53	327630	28.10 ug/l	99
78)	n-Propylbenzene	17.75	91	12365317	28.72 ug/l	99
79)	1,2,3-Trichloropropane	17.75	110	328217	28.64 ug/l	96
80)	Bromobenzene	17.77	156	1840088	29.10 ug/l	97
81)	1,3,5-Trimethylbenzene	17.87	105	7729071	28.09 ug/l	100
82)	2-Chlorotoluene	17.90	91	7118782	26.93 ug/l	99
83)	4-Chlorotoluene	17.99	91	6556091	29.25 ug/l	100
84)	tert-Butylbenzene	18.20	134	1644155	28.56 ug/l	95
85)	1,2,4-Trimethylbenzene	18.24	105	7373571	28.91 ug/l	99
86)	sec-Butylbenzene	18.41	105	10835037	29.19 ug/l	100
87)	p-Isopropyltoluene	18.51	119	8157116	30.44 ug/l	99
88)	1,3-Dichlorobenzene	18.61	146	3574684	30.40 ug/l	99
89)	1,4-Dichlorobenzene	18.69	146	3302769	29.36 ug/l	99
90)	Benzyl Chloride	18.79	91	1768362	30.50 ug/l	100
91)	n-Butylbenzene	18.90	91	7541434	31.57 ug/l	100
92)	1,2-Dichlorobenzene	19.08	146	2864039	29.49 ug/l	99
93)	1,2-Dibromo-3-chloropropan	19.90	157	168300	32.00 ug/l	97
94)	1,2,4-Trichlorobenzene	20.80	180	1532112	32.73 ug/l	99
95)	Hexachlorobutadiene	20.89	225	988528	29.72 ug/l	99
96)	Naphthalene	21.18	128	2357095	32.40 ug/l	99
97)	1,2,3-Trichlorobenzene	21.49	180	1181554	32.35 ug/l	99

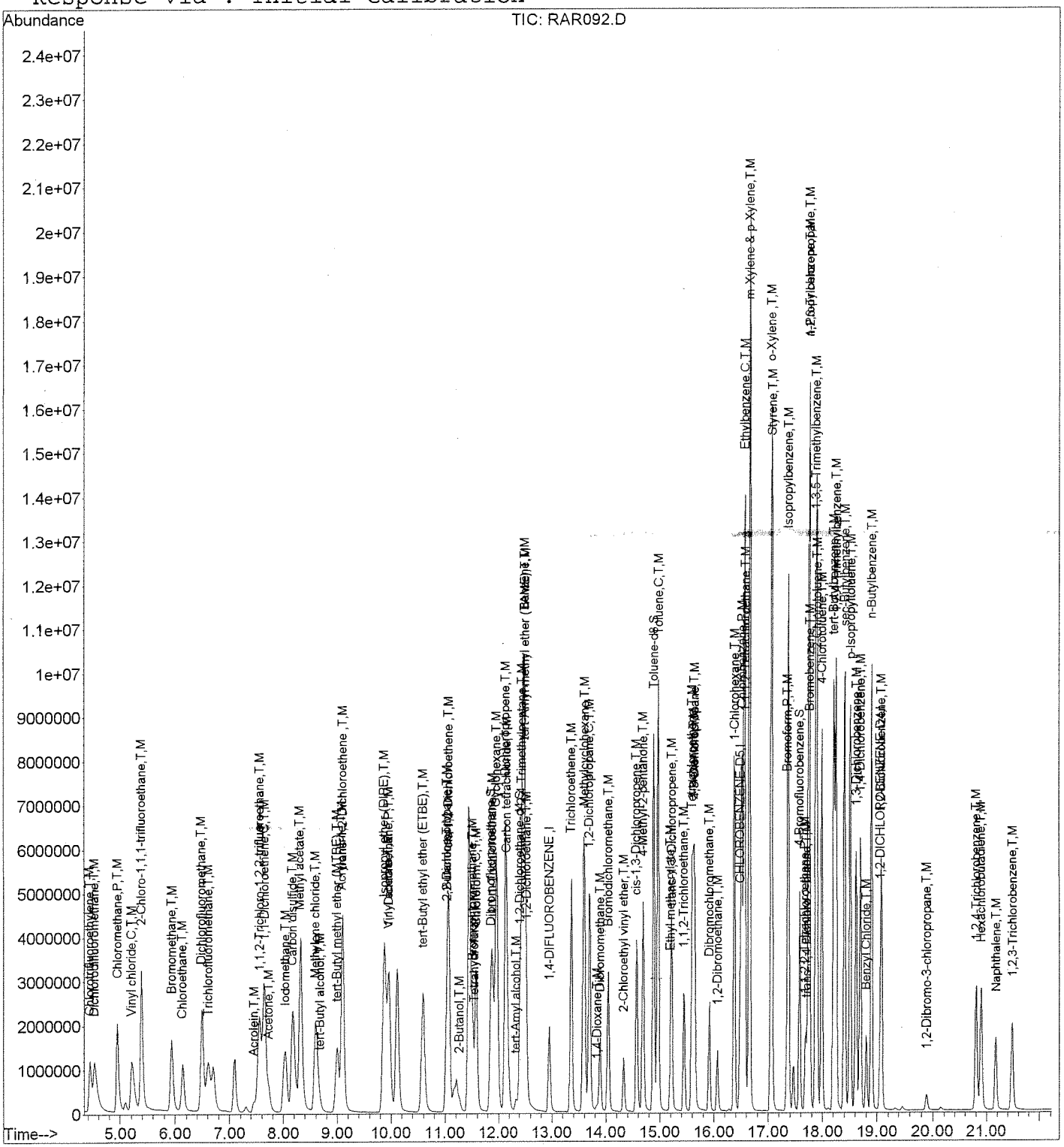
SU 1/28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR092.D Vial: 9
Acq On : 19 Jan 2016 10:28 pm Operator: ODinh
Sample : VOF3A198 Inst : F3
Misc : 30ppb 8260/150ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR093.D
Acq On : 19 Jan 2016 10:56 pm
Sample : VOF3A199
Misc : 50ppb 8260/250ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 10
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.95	114	2440121	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.48	117	1913077	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	586488	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.85	111	4091406	51.44 ug/l	0.00
Spiked Amount 10.000			Recovery	= 514.40%	
40) 1,2-Dichloroethane-d4	12.40	65	2429756	46.75 ug/l	0.00
Spiked Amount 10.000			Recovery	= 467.50%	
55) Toluene-d8	14.88	98	12906185	48.28 ug/l	0.00
Spiked Amount 10.000			Recovery	= 482.80%	
75) 4-Bromofluorobenzene	17.57	95	3857935	45.66 ug/l	0.00
Spiked Amount 10.000			Recovery	= 456.60%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.43	116	2699102	50.29 ug/l	96
3) Dichlorodifluoromethane	4.52	85	4941000	48.01 ug/l	100
4) Chloromethane	4.96	50	6405158	46.93 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	5224132	51.81 ug/l	96
6) Vinyl chloride	5.21	62	5560580	48.71 ug/l	100
7) Bromomethane	5.94	94	3689849	52.47 ug/l	99
8) Chloroethane	6.13	64	3264893	48.90 ug/l	98
9) Dichlorofluoromethane	6.50	67	8393735	46.96 ug/l	100
10) Trichlorofluoromethane	6.61	101	5495564	49.11 ug/l	100
11) Acrolein	7.46	56	781657	278.90 ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	7.56	151	2600313	50.22 ug/l	99
13) 1,1-Dichloroethene	7.65	61	7329149	47.86 ug/l	96
14) Acetone	7.73	43	2108191	246.47 ug/l	96
15) Iodomethane	8.04	142	7529368	53.64 ug/l	97
16) Methyl acetate	8.29	43	1521062	50.29 ug/l	98
17) Carbon disulfide	8.17	76	14722499	48.67 ug/l	99
18) Methylene chloride	8.59	49	5710638	46.62 ug/l	93
19) tert-Butyl alcohol	8.68	59	817434	266.04 ug/l	92
20) tert-Butyl methyl ether (M	8.99	73	5746017	52.56 ug/l	99
21) trans-1,2-Dichloroethene	9.10	61	6741744	47.95 ug/l	96
22) Acrylonitrile	9.08	53	3128369	277.09 ug/l	99
23) Isopropyl ether (DIPE)	9.87	45	14886952	49.80 ug/l	96
24) 1,1-Dichloroethane	9.96	63	8232945	48.20 ug/l	100
25) Vinyl acetate	9.93	86	404058	54.82 ug/l #	89
26) tert-Butyl ethyl ether (ET	10.59	59	9322062	51.88 ug/l	98
27) 2,2-Dichloropropane	11.03	77	3302239	41.50 ug/l	98
28) cis-1,2-Dichloroethene	11.06	96	4755805	51.04 ug/l	94

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

SN 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR093.D
Acq On : 19 Jan 2016 10:56 pm
Sample : VOF3A199
Misc : 50ppb 8260/250ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 10
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
29)	2-Butanone	11.03	43	3950112	274.11 ug/l		96
30)	2-Butanol	11.26	45	736082	283.09 ug/l		99
31)	Bromochloromethane	11.51	128	1755830	53.20 ug/l	#	87
32)	Tetrahydrofuran	11.54	42	479785	42.94 ug/l		94
33)	Chloroform	11.57	83	6875405	47.75 ug/l		98
35)	1,1,1-Trichloroethane	11.88	97	5130667	47.29 ug/l		98
36)	Cyclohexane	11.96	56	8873299	47.67 ug/l		97
37)	1,1-Dichloropropene	12.12	110	2207576	50.43 ug/l		99
38)	Carbon tetrachloride	12.14	119	4888456	49.44 ug/l		100
39)	tert-Amyl alcohol	12.33	59	605175	294.40 ug/l		97
41)	2,2,4-Trimethylpentane	12.45	57	14364652	47.39 ug/l		98
42)	Benzene	12.46	78	16312215	49.65 ug/l		98
43)	1,2-Dichloroethane	12.52	62	3098282	46.32 ug/l		99
44)	tert-Amyl methyl ether (TA	12.49	87	1325198	51.53 ug/l		94
45)	Trichloroethene	13.36	130	4662223	52.01 ug/l		95
46)	Methylcyclohexane	13.58	83	6429110	49.73 ug/l		96
47)	1,2-Dichloropropane	13.68	63	3945269	48.84 ug/l		97
48)	1,4-Dioxane	13.83	88	291365	1128.31 ug/l		99
49)	Dibromomethane	13.88	93	1695436	52.18 ug/l		96
50)	Bromodichloromethane	14.04	83	4763824	49.25 ug/l		99
51)	2-Chloroethyl vinyl ether	14.32	63	1013864	53.90 ug/l		99
52)	cis-1,3-Dichloropropene	14.56	75	5443736	51.91 ug/l		96
53)	4-Methyl-2-pentanone	14.68	43	8697165	258.65 ug/l		97
56)	Toluene	14.97	91	15578136	46.10 ug/l		97
57)	Ethyl methacrylate	15.19	69	2514023	50.57 ug/l		94
58)	trans-1,3-Dichloropropene	15.22	75	3794007	49.80 ug/l		97
59)	1,1,2-Trichloroethane	15.44	97	2139380	51.74 ug/l		99
60)	Tetrachloroethene	15.59	164	3085251	51.05 ug/l		99
61)	2-Hexanone	15.62	43	5599058	259.27 ug/l		95
62)	1,3-Dichloropropane	15.64	76	3779261	49.80 ug/l		100
63)	Dibromochloromethane	15.92	129	2985233	52.43 ug/l		99
64)	1,2-Dibromoethane	16.07	107	2230738	52.92 ug/l		99
65)	1-Chlorohexane	16.38	91	6359053	49.04 ug/l		95
66)	Chlorobenzene	16.51	112	10392575	51.38 ug/l		94
67)	Ethylbenzene	16.56	91	15333243	42.49 ug/l		90
68)	1,1,1,2-Tetrachloroethane	16.57	131	3198611	50.45 ug/l		99
69)	m-Xylene & p-Xylene	16.65	91	17855574	67.27 ug/l		62
70)	o-Xylene	17.05	91	12485798	47.54 ug/l		95
71)	Styrene	17.07	104	10835555	54.80 ug/l		96
73)	Bromoform	17.35	173	1362601	50.09 ug/l		100
74)	Isopropylbenzene	17.36	105	15306972	39.97 ug/l		94

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

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR093.D
Acq On : 19 Jan 2016 10:56 pm
Sample : VOF3A199
Misc : 50ppb 8260/250ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 10
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76) 1,1,2,2-Tetrachloroethane	17.68	83	2295760	46.81 ug/l	100
77) trans-1,4-Dichloro-2-buten	17.71	53	556551	47.03 ug/l	98
78) n-Propylbenzene	17.74	91	16124751	36.91 ug/l	89
79) 1,2,3-Trichloropropane	17.75	110	544902	46.85 ug/l	93
80) Bromobenzene	17.77	156	3209828	50.02 ug/l	91
81) 1,3,5-Trimethylbenzene	17.87	105	12825428	45.93 ug/l	97
82) 2-Chlorotoluene	17.90	91	11953481	44.56 ug/l	98
83) 4-Chlorotoluene	17.99	91	10760108	47.31 ug/l	97
84) tert-Butylbenzene	18.20	134	2833887	48.52 ug/l	92
85) 1,2,4-Trimethylbenzene	18.24	105	12468455	48.18 ug/l	96
86) sec-Butylbenzene	18.41	105	16128971	42.83 ug/l	94
87) p-Isopropyltoluene	18.51	119	13820935	50.82 ug/l	99
88) 1,3-Dichlorobenzene	18.61	146	6162192	51.64 ug/l	98
89) 1,4-Dichlorobenzene	18.69	146	5839214	51.16 ug/l	99
90) Benzyl Chloride	18.79	91	3024880	51.41 ug/l	99
91) n-Butylbenzene	18.90	91	12350154	50.95 ug/l	99
92) 1,2-Dichlorobenzene	19.08	146	5027667	51.01 ug/l	98
93) 1,2-Dibromo-3-chloropropan	19.90	157	302991	56.77 ug/l	94
94) 1,2,4-Trichlorobenzene	20.80	180	2645686	55.70 ug/l	100
95) Hexachlorobutadiene	20.89	225	1667051	49.39 ug/l	99
96) Naphthalene	21.18	128	4222089	57.20 ug/l	98
97) 1,2,3-Trichlorobenzene	21.49	180	2063374	55.68 ug/l	99

SU 1/28/16

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

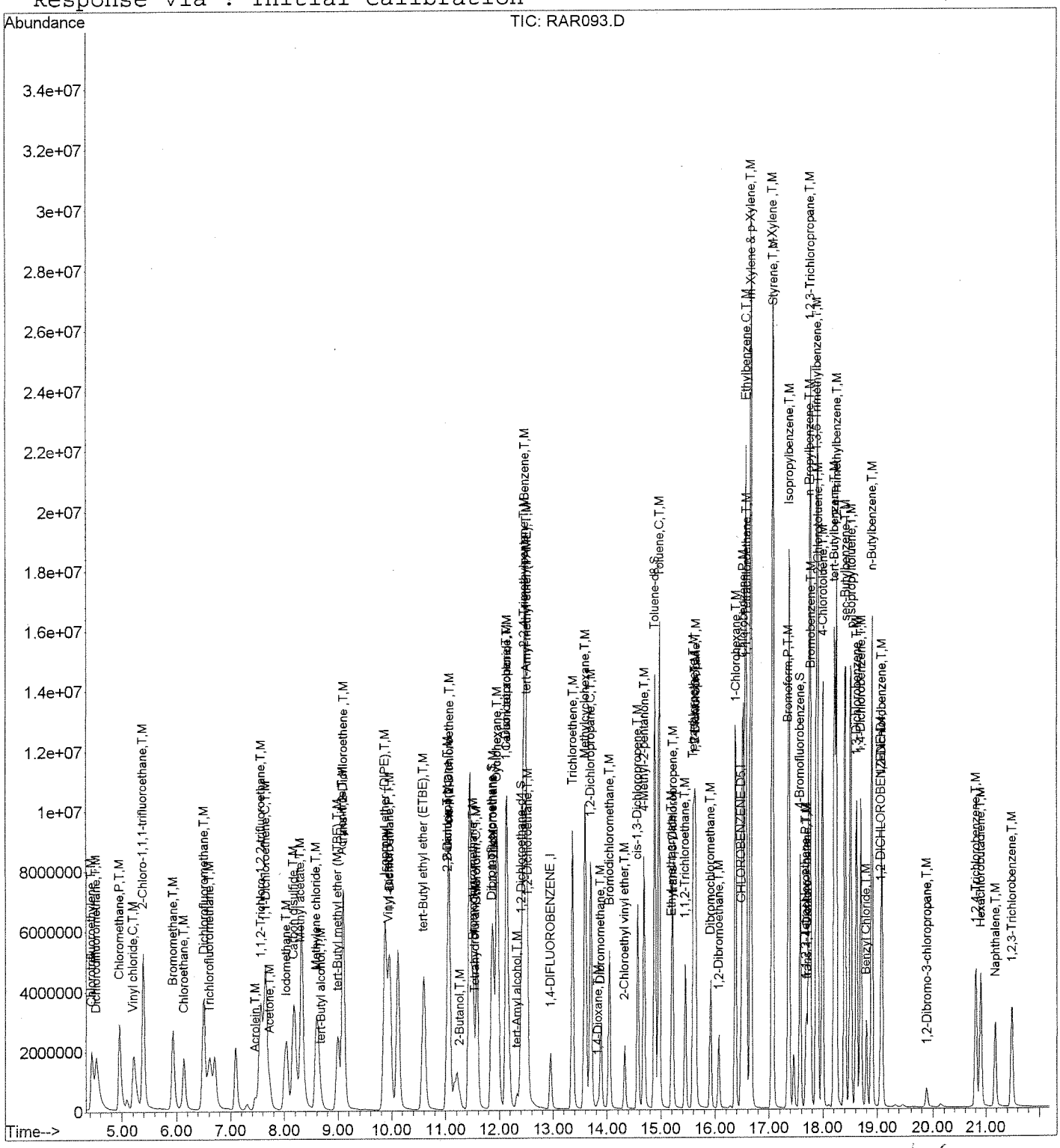
Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR093.D
Acq On : 19 Jan 2016 10:56 pm
Sample : VOF3A199
Misc : 50ppb 8260/250ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 10
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



SY 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR094.D
Acq On : 19 Jan 2016 11:24 pm
Sample : VOF3A1910
Misc : 100ppb 8260/500ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 11
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2476179	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1918383	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	582125	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	11.85	111	7733064	95.81	ug/l	0.00
Spiked Amount 10.000			Recovery	=	958.10%	
40) 1,2-Dichloroethane-d4	12.40	65	4371494	82.88	ug/l	0.00
Spiked Amount 10.000			Recovery	=	828.80%	
55) Toluene-d8	14.88	98	19756755	73.70	ug/l	0.00
Spiked Amount 10.000			Recovery	=	737.00%	
75) 4-Bromofluorobenzene	17.57	95	7552921	90.06	ug/l	0.00
Spiked Amount 10.000			Recovery	=	900.60%	

Target Compounds						Qvalue
2) Chlorotrifluoroethylene	4.43	116	5857305	106.74	ug/l	94
3) Dichlorodifluoromethane	4.52	85	9974752	95.52	ug/l	100
4) Chloromethane	4.96	50	12623449	91.15	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	10539567	103.00	ug/l	93
6) Vinyl chloride	5.21	62	10970684	94.70	ug/l	100
7) Bromomethane	5.91	94	7098172	99.46	ug/l	99
8) Chloroethane	6.12	64	6285994	92.77	ug/l	97
9) Dichlorofluoromethane	6.49	67	16025858	88.36	ug/l	99
10) Trichlorofluoromethane	6.61	101	10894672	95.94	ug/l	100
11) Acrolein	7.44	56	1437398	505.40	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	7.56	151	5438902	103.52	ug/l	99
13) 1,1-Dichloroethene	7.64	61	13810059	88.88	ug/l	93
14) Acetone	7.73	43	3513428	404.77	ug/l	93
15) Iodomethane	8.04	142	15343581	107.73	ug/l	94
16) Methyl acetate	8.29	43	2573781	83.85	ug/l	96
17) Carbon disulfide	8.17	76	29377882	95.71	ug/l	99
18) Methylene chloride	8.59	49	10239710	82.37	ug/l	90
19) tert-Butyl alcohol	8.68	59	1389595	445.67	ug/l #	45
20) tert-Butyl methyl ether (M	8.99	73	10490825	94.56	ug/l	98
21) trans-1,2-Dichloroethene	9.08	61	12498696	87.61	ug/l	91
22) Acrylonitrile	9.08	53	5427369	473.73	ug/l	100
23) Isopropyl ether (DIPE)	9.87	45	25727673	84.81	ug/l	93
24) 1,1-Dichloroethane	9.96	63	15397540	88.83	ug/l	99
25) Vinyl acetate	9.93	86	745690	99.70	ug/l #	92
26) tert-Butyl ethyl ether (ET	10.59	59	17014636	93.31	ug/l	96
27) 2,2-Dichloropropane	11.03	77	5541388	68.63	ug/l	96
28) cis-1,2-Dichloroethene	11.06	96	9018755	95.39	ug/l	90

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR094.D
Acq On : 19 Jan 2016 11:24 pm
Sample : VOF3A1910
Misc : 100ppb 8260/500ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 11
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
29)	2-Butanone	11.03	43	6490641	443.84 ug/l		94
30)	2-Butanol	11.27	45	1221976	463.11 ug/l		96
31)	Bromochloromethane	11.51	128	3455827	103.19 ug/l	#	80
32)	Tetrahydrofuran	11.54	42	799163	70.48 ug/l		90
33)	Chloroform	11.57	83	12853161	87.96 ug/l		98
35)	1,1,1-Trichloroethane	11.88	97	9246979	83.99 ug/l		98
36)	Cyclohexane	11.96	56	16792625	88.90 ug/l		94
37)	1,1-Dichloropropene	12.12	110	4412834	99.33 ug/l		100
38)	Carbon tetrachloride	12.14	119	9342130	93.11 ug/l		99
39)	tert-Amyl alcohol	12.33	59	1060370	508.34 ug/l		95
41)	2,2,4-Trimethylpentane	12.45	57	28599293	92.99 ug/l		96
42)	Benzene	12.46	78	24882614	74.64 ug/l		93
43)	1,2-Dichloroethane	12.51	62	5543796	81.68 ug/l		99
44)	tert-Amyl methyl ether (TA	12.49	87	2454529	94.05 ug/l		94
45)	Trichloroethene	13.36	130	9399341	103.34 ug/l		93
46)	Methylcyclohexane	13.60	83	12518018	95.42 ug/l		93
47)	1,2-Dichloropropane	13.69	63	7202759	87.87 ug/l		94
48)	1,4-Dioxane	13.83	88	531801	2029.41 ug/l		96
49)	Dibromomethane	13.88	93	3126046	94.81 ug/l		93
50)	Bromodichloromethane	14.04	83	8644081	88.07 ug/l		99
51)	2-Chloroethyl vinyl ether	14.33	63	1898334	99.45 ug/l		98
52)	cis-1,3-Dichloropropene	14.56	75	10141040	95.29 ug/l		94
53)	4-Methyl-2-pentanone	14.68	43	14564441	426.84 ug/l		94
56)	Toluene	14.97	91	21553006	63.61 ug/l		74
57)	Ethyl methacrylate	15.19	69	4493702	90.14 ug/l		89
58)	trans-1,3-Dichloropropene	15.20	75	7041611	92.18 ug/l		93
59)	1,1,2-Trichloroethane	15.44	97	3953997	95.36 ug/l		97
60)	Tetrachloroethene	15.59	164	6271549	103.49 ug/l		98
61)	2-Hexanone	15.62	43	9265006	427.84 ug/l		92
62)	1,3-Dichloropropane	15.64	76	6886998	90.50 ug/l		100
63)	Dibromochloromethane	15.92	129	5691519	99.69 ug/l		99
64)	1,2-Dibromoethane	16.07	107	4219146	99.82 ug/l		100
65)	1-Chlorohexane	16.38	91	12692823	97.61 ug/l		92
66)	Chlorobenzene	16.52	112	16389921	80.81 ug/l		92
67)	Ethylbenzene	16.55	91	19026702	52.58 ug/l		52
68)	1,1,1,2-Tetrachloroethane	16.57	131	6234997	98.08 ug/l		99
69)	m-Xylene & p-Xylene	16.65	91	23047103	86.59 ug/l		63
70)	o-Xylene	17.05	91	18608329	70.65 ug/l		74
71)	Styrene	17.07	104	17004682	85.76 ug/l		91
73)	Bromoform	17.35	173	2619075	96.99 ug/l		99
74)	Isopropylbenzene	17.36	105	20255440	53.28 ug/l		72

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

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR094.D
Acq On : 19 Jan 2016 11:24 pm
Sample : VOF3A1910
Misc : 100ppb 8260/500ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016

Vial: 11
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	4129010	84.82 ug/l		100
77)	trans-1,4-Dichloro-2-buten	17.71	53	981053	83.53 ug/l		97
78)	n-Propylbenzene	17.74	91	21043356	48.53 ug/l		60
79)	1,2,3-Trichloropropane	17.75	110	1029589	89.19 ug/l		88
80)	Bromobenzene	17.77	156	6579348	103.29 ug/l	#	84
81)	1,3,5-Trimethylbenzene	17.87	105	17323112	62.50 ug/l		64
82)	2-Chlorotoluene	17.90	91	18087818	67.93 ug/l		77
83)	4-Chlorotoluene	17.99	91	17027361	75.42 ug/l		79
84)	tert-Butylbenzene	18.21	134	5679367	97.97 ug/l	#	66
85)	1,2,4-Trimethylbenzene	18.24	105	17952922	69.89 ug/l		66
86)	sec-Butylbenzene	18.39	105	20976224	56.11 ug/l		70
87)	p-Isopropyltoluene	18.50	119	18410849	68.20 ug/l		79
88)	1,3-Dichlorobenzene	18.62	146	12649923	106.81 ug/l		96
89)	1,4-Dichlorobenzene	18.69	146	11626992	102.62 ug/l		99
90)	Benzyl Chloride	18.79	91	5655484	96.83 ug/l		98
91)	n-Butylbenzene	18.90	91	19203384	79.82 ug/l		83
92)	1,2-Dichlorobenzene	19.08	146	9758959	99.76 ug/l		97
93)	1,2-Dibromo-3-chloropropan	19.90	157	557198	105.19 ug/l		91
94)	1,2,4-Trichlorobenzene	20.81	180	5382328	114.16 ug/l		100
95)	Hexachlorobutadiene	20.89	225	3573873	106.68 ug/l		99
96)	Naphthalene	21.18	128	8301748	113.31 ug/l		98
97)	1,2,3-Trichlorobenzene	21.49	180	4031829	109.61 ug/l		100

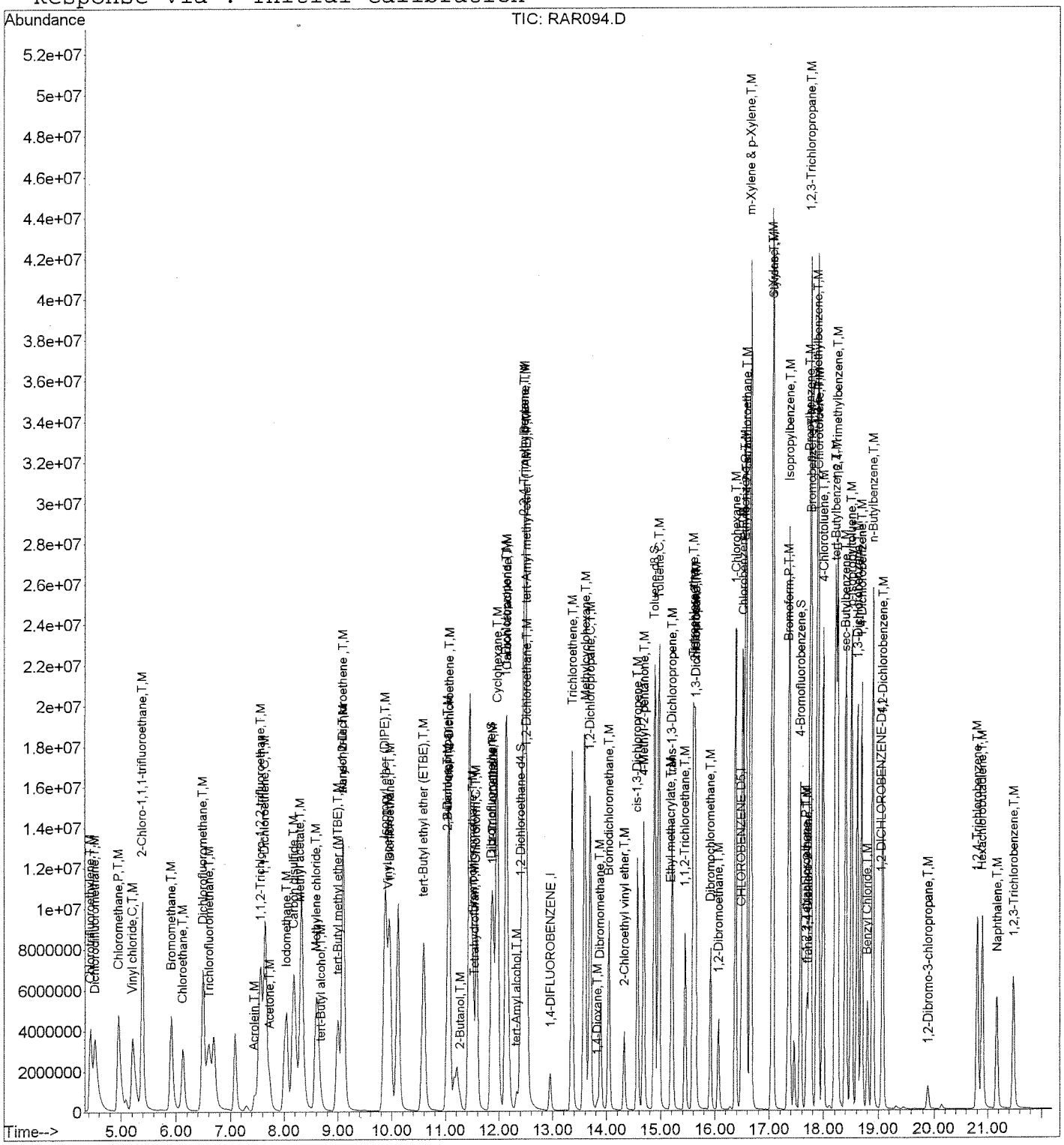
Su 11 28/16

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR094.D Vial: 11
Acq On : 19 Jan 2016 11:24 pm Operator: ODinh
Sample : VOF3A1910 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 27 16:15 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



RAR094.D VOF3A19.M Wed Jan 27 16:19:57 2016 Page 4

SM 1/28/16

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RBW400
Instrument ID: 06
GC Column:RTX502.2ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 02/22/16
BFB Injection Time : 14:35
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.36
75	30.0 - 60.0% of mass 95	44.19
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.15
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	76.97
175	5.0 - 9.0% of mass 174	5.75(7.5)1
176	95.0 - 101.0% of mass 174	76.32(99.2)1
177	5.0 - 9.0% of mass 176	5.05(6.6)2

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

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	VSTD0.3	VO06B221	RBW401	02/22/16	15:06
2	VSTD0.5	VO06B222	RBW402	02/22/16	15:31
3	VSTD01	VO06B223	RBW403	02/22/16	15:57
4	VSTD02	VO06B224	RBW404	02/22/16	16:22
5	VSTD05	VO06B225	RBW405	02/22/16	16:47
6	VSTD010	VO06B226	RBW406	02/22/16	17:12
7	VSTD020	VO06B227	RBW407	02/22/16	17:38
8	VSTD030	VO06B228	RBW408	02/22/16	18:03
9	VSTD050	VO06B229	RBW409	02/22/16	18:28
10	VSTD100	VO06B2210	RBW410	02/22/16	18:54
11	VSTD010	IVO06B2201	RBW413	02/22/16	20:09

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :TO06
Beginning DateTime :02/22/16 15:06
Spike Units :PPB
IC File :RBW406

Column Spec :RTX502.2 ID :0.25MM
Ending DateTime :02/22/16 18:54
HPChem Method :VO06B22

M	IDX	Parameters	.3 15:06 RBW401	.5 15:31 RBW402	1 15:57 RBW403	2 16:22 RBW404	5 16:47 RBW405	10 17:12 RBW406	20 17:38 RBW407	30 18:03 RBW408	50 18:28 RBW409	100 18:54 RBW410	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	8.9071
	2	Dichlorodifluoromethane	------	0.412	0.341	0.350	0.368	0.396	0.376	0.441	0.405	0.425	0.390	8.71	1.8179
	3	Chloromethane	0.404	0.420	0.379	0.427	0.436	0.440	0.410	0.475	0.421	0.431	0.424	5.95	2.0489
	4	Vinyl chloride	------	0.448	0.387	0.406	0.395	0.404	0.346	0.398	0.335	------	0.390	9.17	2.1795
	5	Bromomethane	0.240	0.272	0.230	0.248	0.257	0.264	0.244	0.290	0.254	0.272	0.257	6.94	2.6780
	6	Chloroethane	0.222	0.239	0.220	0.241	0.226	0.236	0.210	0.256	0.221	0.236	0.231	5.83	2.7806
	7	Dichlorofluoromethane	0.647	0.595	0.519	0.589	0.614	0.640	0.562	0.692	0.589	0.623	0.607	7.90	2.8163
	8	Trichlorofluoromethane	0.353	0.428	0.397	0.352	0.389	0.395	0.363	0.432	0.394	0.421	0.392	7.48	3.0781
5	9	Acrolein	------	------	------	0.021	0.016	0.016	0.013	0.017	0.014	0.015	0.016	14.82	3.5954
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	0.200	0.171	0.170	0.183	0.184	0.208	0.185	0.217	0.202	0.220	0.194	9.19	3.6433
5	11	Acetone	------	------	0.038	0.033	0.028	0.027	0.021	0.027	0.022	0.023	0.027	20.87	3.6850
	12	1,1-Dichloroethene	0.546	0.499	0.466	0.497	0.504	0.537	0.478	0.577	0.519	0.544	0.517	6.67	3.8634
5	13	tert-Butyl alcohol	------	------	0.012	0.011	0.010	0.010	0.008	0.011	0.009	0.009	0.010	12.97	3.9769
	14	Acetonitrile	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	15	Methyl acetate	------	------	0.192	0.130	0.105	0.106	0.091	0.107	0.089	0.091	0.114	30.07	4.3395
	16	Iodomethane	0.534	0.475	0.432	0.482	0.510	0.527	0.477	0.567	0.498	0.525	0.503	7.61	4.2977
	17	Methylene chloride	------	0.406	0.355	0.363	0.374	0.375	0.330	0.393	0.344	0.364	0.367	6.34	4.5514
	18	Carbon disulfide	1.184	1.493	1.154	1.162	1.180	1.216	1.079	1.290	1.140	1.215	1.211	9.37	4.5550
5	19	Acrylonitrile	0.047	0.044	0.037	0.042	0.045	0.044	0.037	0.048	0.041	0.043	0.043	8.46	4.7603
	20	tert-Butyl methyl ether (MTBE)	0.524	0.463	0.433	0.456	0.476	0.476	0.398	0.501	0.425	0.445	0.460	8.02	4.8005
	21	trans-1,2-Dichloroethene	0.489	0.465	0.417	0.462	0.460	0.483	0.437	0.527	0.460	0.483	0.468	6.41	5.0087
	22	Isopropyl ether (DIPE)	1.081	0.919	0.871	0.956	1.028	1.036	0.923	1.093	0.959	0.985	0.985	7.43	5.5590
	23	Vinyl acetate	------	0.237	0.252	0.281	0.306	0.315	0.276	0.349	0.299	0.311	0.292	11.67	5.7578
	24	1,1-Dichloroethane	0.626	0.578	0.511	0.549	0.560	0.595	0.522	0.630	0.555	0.584	0.571	6.95	5.7241
5	25	2-Butanol	------	------	------	0.007	0.009	0.009	0.008	0.010	0.009	0.009	0.009	13.73	6.1388
	26	tert-Butyl ethyl ether (ETBE)	0.796	0.744	0.690	0.734	0.753	0.774	0.669	0.786	0.699	0.725	0.737	5.72	6.2774
5	27	2-Butanone	------	0.017	0.012	0.012	0.013	0.013	0.011	0.013	0.012	0.012	0.013	13.13	6.4816
	28	2,2-Dichloropropane	0.281	0.270	0.251	0.274	0.273	0.279	0.243	0.289	0.237	------	0.267	6.82	6.6927
	29	cis-1,2-Dichloroethene	0.395	0.349	0.308	0.346	0.344	0.355	0.318	0.378	0.328	0.345	0.347	7.47	6.7712
	30	Chloroform	0.571	0.522	0.483	0.501	0.503	0.512	0.456	0.542	0.483	0.504	0.508	6.39	7.0389
5	31	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	32	Bromochloromethane	0.224	0.194	0.200	0.211	0.238	0.246	0.209	0.252	0.219	0.229	0.222	8.73	7.3067
	33	Tetrahydrofuran	------	------	0.036	0.033	0.034	0.034	0.030	0.035	0.030	0.030	0.033	7.48	7.3737
	34	Dibromofluoromethane	0.265	0.296	0.290	0.281	0.294	0.287	0.261	0.313	0.267	0.285	0.284	5.73	7.4063
	35	1,1,1-Trichloroethane	0.448	0.375	0.349	0.374	0.367	0.388	0.347	0.417	0.357	0.374	0.380	8.27	7.7053
	36	Cyclohexane	0.686	0.647	0.595	0.624	0.619	0.637	0.589	0.684	0.609	0.641	0.633	5.22	7.7172
	37	2,2,4-Trimethylpentane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	38	1,1-Dichloropropene	0.180	0.160	0.149	0.162	0.161	0.177	0.156	0.189	0.170	0.180	0.168	7.51	7.9715
	39	Carbon tetrachloride	0.362	0.335	0.319	0.337	0.337	0.362	0.327	0.389	0.349	0.372	0.349	6.34	8.1217
	40	tert-Amyl methyl ether (TAME)	0.121	0.169	0.129	0.131	0.127	0.128	0.107	0.132	0.112	0.118	0.127	13.25	8.1916
	41	1,2-Dichloroethane-d4	0.215	0.220	0.222	0.204	0.217	0.207	0.180	0.222	0.188	0.200	0.207	7.07	8.2437
	42	1,2-Dichloroethane	0.246	0.221	0.222	0.238	0.256	0.261	0.223	0.268	0.233	0.242	0.241	7.04	8.4014
	43	Benzene	1.469	1.292	1.172	1.278	1.287	1.325	1.174	1.368	1.206	1.216	1.279	7.29	8.4073
	44	Trichloroethene	0.360	0.328	0.310	0.333	0.349	0.372	0.342	0.400	0.356	0.368	0.352	7.31	9.4247
	45	Methylcyclohexane	0.647	0.584	0.523	0.552	0.543	0.568	0.515	0.587	0.543	0.573	0.564	6.75	9.5094
	46	1,2-Dichloropropane	0.348	0.306	0.284	0.309	0.314	0.331	0.291	0.350	0.302	0.319	0.315	7.05	9.7162
20	47	1,4-Dioxane	------	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	7.29	10.1422
	48	Bromodichloromethane	0.431	0.333	0.320	0.328	0.351	0.367	0.320	0.381	0.337	0.355	0.352	9.71	10.0955
	49	Dibromomethane	0.136	0.123	0.116	0.125	0.134	0.137	0.117	0.145	0.122	0.128	0.128	7.28	10.1743
	50	2-Chloroethyl vinyl ether	0.070	0.064	0.063	0.067	0.073	0.074	0.063	0.080	0.069	0.074	0.070	8.10	10.6324
5	51	4-Methyl-2-pentanone	------	0.120	0.115	0.128	0.141	0.141	0.123	0.151	0.126	0.126	0.130	9.01	10.6710
	52	cis-1,3-Dichloropropene	0.469	0.398	0.385	0.416	0.449	0.473	0.410	0.498	0.428	0.450	0.438	8.25	10.9938
	53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8213
	54	Toluene-d8	1.272	1.415	1.421	1.306	1.319	1.346	1.179	1.386	1.189	1.260	1.309	6.56	11.3761
	55	Toluene	1.896	1.605	1.475	1.565	1.531	1.630	1.402	1.665	1.427	1.521	1.572	9.04	11.5010
	56	Ethyl methacrylate	------	0.217	0.219	0.229	0.256	0.276	0.226	0.282	0.236	0.251	0.244	9.87	11.8163
	57	trans-1,3-Dichloropropene	0.483	0.317	0.322	0.340	0.376	0.404	0.343	0.418	0.354	0.382	0.374	13.57	11.8134
	58	1,1,2-Trichloroethane	0.220	0.215	0.190	0.196	0.212	0.217	0.181	0.222	0.190	0.206	0.205	7.15	12.0588

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5	59	2-Hexanone	------	0.079	0.079	0.086	0.101	0.103	0.085	0.107	0.091	0.093	0.091	11.22	12.0890
	60	1,3-Dichloropropane	0.378	0.345	0.352	0.360	0.389	0.395	0.341	0.422	0.351	0.382	0.371	7.04	12.4693
	61	Tetrachloroethene	0.308	0.268	0.279	0.301	0.296	0.329	0.284	0.341	0.307	0.341	0.305	8.30	12.5571
	62	Dibromochloromethane	0.247	0.228	0.232	0.245	0.258	0.274	0.233	0.288	0.246	0.267	0.252	7.79	12.8828
	63	2-Ethyl-1-butanol	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	64	1,2-Dibromoethane	0.202	0.186	0.178	0.185	0.203	0.212	0.180	0.224	0.192	0.206	0.197	7.65	13.2070
	65	1-Chlorohexane	0.722	0.611	0.617	0.645	0.621	0.722	0.636	0.737	0.654	0.699	0.666	7.33	13.4867
	66	Chlorobenzene	0.968	0.842	0.831	0.888	0.932	1.003	0.866	1.033	0.896	0.951	0.921	7.38	13.8882
	67	1,1,1,2-Tetrachloroethane	0.311	0.275	0.279	0.288	0.299	0.324	0.274	0.333	0.290	0.315	0.299	7.01	13.9611
	68	Ethylbenzene	1.783	1.508	1.559	1.624	1.684	1.846	1.561	1.880	1.592	1.601	1.664	7.78	13.9775
2	69	m-Xylene & p-Xylene	1.281	1.143	1.114	1.225	1.206	1.311	1.124	1.310	1.149	------	1.207	6.57	14.0998
	70	o-Xylene	1.321	1.164	1.149	1.222	1.271	1.359	1.153	1.404	1.194	1.243	1.248	7.17	14.8045
	71	Styrene	1.019	0.869	0.874	0.945	0.973	1.047	0.895	1.073	0.951	0.997	0.964	7.36	14.8684
	72	Isopropylbenzene	1.587	1.348	1.347	1.420	1.450	1.604	1.401	1.622	1.433	1.435	1.465	7.00	15.3920
	73	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	18.1332
	74	Bromoform	0.343	0.311	0.331	0.350	0.368	0.379	0.332	0.417	0.363	0.388	0.358	8.78	15.4128
	75	1,1,2,2-Tetrachloroethane	0.640	0.607	0.598	0.634	0.647	0.640	0.557	0.699	0.586	0.617	0.623	6.26	15.6775
	76	4-Bromofluorobenzene	1.326	1.358	1.298	1.142	1.232	1.159	1.059	1.284	1.129	1.160	1.215	8.15	15.7995
	77	1,2,3-Trichloropropane	0.162	0.171	0.145	0.153	0.162	0.161	0.138	0.172	0.152	0.158	0.157	6.86	15.9200
	78	trans-1,4-Dichloro-2-butene	------	------	0.222	0.178	0.179	0.173	0.152	0.190	0.167	0.172	0.179	11.29	16.0301
	79	n-Propylbenzene	6.713	5.528	5.517	5.936	5.664	5.963	5.354	6.309	5.736	------	5.858	7.35	16.0466
	80	Bromobenzene	0.977	0.850	0.854	0.897	0.910	0.934	0.831	1.021	0.917	0.979	0.917	6.79	16.1178
	81	1,3,5-Trimethylbenzene	4.012	3.322	3.070	3.399	3.298	3.363	3.072	3.666	3.357	3.347	3.391	8.13	16.3052
	82	2-Chlorotoluene	4.125	3.414	3.341	3.483	3.383	3.522	3.263	3.833	3.391	3.377	3.513	7.53	16.3349
	83	4-Chlorotoluene	2.889	2.854	2.582	2.969	3.028	2.900	2.568	3.176	2.927	3.035	2.893	6.62	16.4093
	84	tert-Butylbenzene	1.018	0.849	0.823	0.865	0.883	0.927	0.854	0.989	0.933	0.972	0.911	7.29	16.8853
	85	1,2,4-Trimethylbenzene	3.463	3.296	3.078	3.184	3.242	3.330	2.968	3.557	3.231	3.263	3.261	5.23	16.9433
	86	sec-Butylbenzene	5.043	4.289	4.273	4.507	4.543	4.883	4.320	5.082	4.672	4.481	4.609	6.55	17.2080
	87	p-Isopropyltoluene	4.113	3.489	3.231	3.662	3.568	3.780	3.493	4.066	3.847	3.739	3.699	7.32	17.4059
	88	1,3-Dichlorobenzene	1.910	1.666	1.624	1.730	1.763	1.790	1.674	1.972	1.769	1.840	1.774	6.19	17.5397
	89	1,4-Dichlorobenzene	1.780	1.614	1.519	1.646	1.736	1.769	1.580	1.910	1.716	1.754	1.702	6.71	17.6885
	90	n-Butylbenzene	3.932	3.338	3.268	3.428	3.508	3.710	3.388	3.993	3.634	3.727	3.593	6.92	17.9547
	91	1,2-Dichlorobenzene	1.478	1.388	1.302	1.404	1.488	1.529	1.365	1.662	1.482	1.502	1.460	6.90	18.1659
	92	1,2-Dibromo-3-chloropropane	0.090	0.082	0.089	0.080	0.091	0.091	0.081	0.103	0.091	0.093	0.089	7.67	19.0791
	93	1,2,4-Trichlorobenzene	0.846	0.799	0.787	0.849	0.906	0.933	0.848	1.051	0.969	0.981	0.897	9.57	20.0504
	94	Hexachlorobutadiene	0.575	0.504	0.514	0.533	0.544	0.595	0.555	0.647	0.610	------	0.564	8.29	20.2013
	95	Naphthalene	1.281	1.194	1.190	1.305	1.358	1.353	1.217	1.546	1.352	1.371	1.317	8.09	20.3583
	96	1,2,3-Trichlorobenzene	0.679	0.606	0.626	0.679	0.688	0.729	0.640	0.803	0.723	0.738	0.691	8.56	20.6468

Spike Amount = Nominal Amount * M
Ave_%RSD : 8.4 Max_%RSD : 30.1

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
11	Acetone	0.00900	0.02312	0.9968
15	Methyl acetate	0.00961	0.09085	0.9979

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Compound List Report TO06

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
Total Cpnds : 96

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	8.91	1.000	A	1	A	B
2	T	Dichlorodifluoromethane	85	1.83	0.205	A	1	A	B
3	T	Chloromethane	50	2.05	0.230	A	1	A	B
4	T	Vinyl chloride	62	2.18	0.245	A	1	A	B
5	T	Bromomethane	94	2.68	0.300	A	1	A	B
6	T	Chloroethane	64	2.78	0.312	A	2	A	B
7	T	Dichlorofluoromethane	67	2.81	0.315	A	1	A	B
8	T	Trichlorofluoromethane	101	3.08	0.345	A	1	A	B
9	T	Acrolein	56	3.60	0.404	A	1	A	B
10	T	1,1,2-Trichloro-1,2,2-trifluor	151	3.64	0.409	A	1	A	B
11	T	Acetone	43	3.69	0.414	L	2	A	B
12	T	1,1-Dichloroethene	61	3.87	0.434	A	2	A	B
13	T	tert-Butyl alcohol	59	3.97	0.446	A	1	A	B
14	T	Acetonitrile	41	0.00	0.000	A	2	A	B
15	T	Methyl acetate	43	4.34	0.487	L	1	A	B
16	T	Iodomethane	142	4.30	0.482	A	1	A	B
17	T	Methylene chloride	49	4.55	0.511	A	2	A	B
18	T	Carbon disulfide	76	4.55	0.511	A	1	A	B
19	T	Acrylonitrile	53	4.76	0.534	A	2	A	B
20	T	tert-Butyl methyl ether (MTBE)	73	4.80	0.539	A	1	A	B
21	T	trans-1,2-Dichloroethene	61	5.01	0.563	A	2	A	B
22	T	Isopropyl ether (DIPE)	45	5.55	0.623	A	1	A	B
23	T	Vinyl acetate	43	5.75	0.646	A	1	A	B
24	T	1,1-Dichloroethane	63	5.72	0.643	A	2	A	B
25	T	2-Butanol	45	6.14	0.689	A	1	A	B
26	T	tert-Butyl ethyl ether (ETBE)	59	6.28	0.704	A	1	A	B
27	T	2-Butanone	72	6.48	0.728	A	1	A	B
28	T	2,2-Dichloropropane	77	6.69	0.751	A	2	A	B
29	T	cis-1,2-Dichloroethene	96	6.77	0.760	A	2	A	B
30	T	Chloroform	83	7.03	0.790	A	2	A	B
31	T	tert-Amyl alcohol	59	0.00	0.000	A	2	A	B
32	T	Bromochloromethane	49	7.30	0.820	A	2	A	B
33	T	Tetrahydrofuran	42	7.38	0.828	A	2	A	B
34	S	Dibromofluoromethane	111	7.41	0.831	A	2	A	B
35	T	1,1,1-Trichloroethane	97	7.70	0.865	A	2	A	B
36	T	Cyclohexane	56	7.72	0.866	A	2	A	B
37	T	2,2,4-Trimethylpentane	57	0.00	0.000	A	3	A	B
38	T	1,1-Dichloropropene	110	7.97	0.895	A	1	A	B
39	T	Carbon tetrachloride	119	8.12	0.912	A	1	A	B
40	T	tert-Amyl methyl ether (TAME)	87	8.19	0.920	A	2	A	B
41	S	1,2-Dichloroethane-d4	65	8.24	0.925	A	1	A	B
42	T	1,2-Dichloroethane	62	8.40	0.943	A	1	A	B
43	T	Benzene	78	8.40	0.943	A	2	A	B
44	T	Trichloroethene	130	9.43	1.058	A	3	A	B
45	T	Methylcyclohexane	83	9.50	1.067	A	2	A	B
46	T	1,2-Dichloropropane	63	9.71	1.090	A	2	A	B
47	T	1,4-Dioxane	88	10.14	1.139	A	1	A	B
48	T	Bromodichloromethane	83	10.10	1.134	A	1	A	B
49	T	Dibromomethane	93	10.17	1.142	A	2	A	B
50	T	2-Chloroethyl vinyl ether	63	10.63	1.194	A	2	A	B
51	T	4-Methyl-2-pentanone	43	10.66	1.197	A	3	A	B
52	T	cis-1,3-Dichloropropene	75	10.99	1.234	A	3	A	B

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53	I	CHLOROBENZENE-D5	117	13.82	1.000	A	2	A	B
54	S	Toluene-d8	98	11.38	0.823	A	1	A	B
55	T	Toluene	91	11.50	0.832	A	1	A	B
56	T	Ethyl methacrylate	69	11.81	0.855	A	2	A	B
57	T	trans-1,3-Dichloropropene	75	11.81	0.855	A	2	A	B
58	T	1,1,2-Trichloroethane	97	12.06	0.873	A	3	A	B
59	T	2-Hexanone	43	12.09	0.875	A	2	A	B
60	T	1,3-Dichloropropane	76	12.46	0.902	A	1	A	B
61	T	Tetrachloroethene	164	12.55	0.908	A	3	A	B
62	T	Dibromochloromethane	129	12.88	0.932	A	1	A	B
63	T	2-Ethyl-1-butanol	43	0.00	0.000	A	3	A	B
64	T	1,2-Dibromoethane	107	13.21	0.956	A	1	A	B
65	T	1-Chlorohexane	91	13.49	0.976	A	3	A	B
66	T	Chlorobenzene	112	13.89	1.005	A	3	A	B
67	T	1,1,1,2-Tetrachloroethane	131	13.96	1.011	A	3	A	B
68	T	Ethylbenzene	91	13.98	1.012	A	1	A	B
69	T	m-Xylene & p-Xylene	91	14.10	1.020	A	1	A	B
70	T	o-Xylene	91	14.80	1.071	A	1	A	B
71	T	Styrene	104	14.87	1.076	A	2	A	B
72	T	Isopropylbenzene	105	15.39	1.114	A	3	A	B
73	I	1,2-DICHLOROBENZENE-D4	152	18.13	1.000	A	1	A	B
74	T	Bromoform	173	15.41	0.850	A	2	A	B
75	T	1,1,2,2-Tetrachloroethane	83	15.68	0.865	A	1	A	B
76	S	4-Bromofluorobenzene	95	15.79	0.871	A	2	A	B
77	T	1,2,3-Trichloropropane	110	15.91	0.878	A	1	A	B
78	T	trans-1,4-Dichloro-2-butene	53	16.03	0.884	A	1	A	B
79	T	n-Propylbenzene	91	16.05	0.885	A	2	A	B
80	T	Bromobenzene	156	16.12	0.889	A	2	A	B
81	T	1,3,5-Trimethylbenzene	105	16.30	0.899	A	2	A	B
82	T	2-Chlorotoluene	91	16.33	0.901	A	1	A	B
83	T	4-Chlorotoluene	91	16.40	0.905	A	1	A	B
84	T	tert-Butylbenzene	134	16.88	0.931	A	2	A	B
85	T	1,2,4-Trimethylbenzene	105	16.94	0.934	A	1	A	B
86	T	sec-Butylbenzene	105	17.21	0.949	A	1	A	B
87	T	p-Isopropyltoluene	119	17.40	0.960	A	2	A	B
88	T	1,3-Dichlorobenzene	146	17.53	0.967	A	2	A	B
89	T	1,4-Dichlorobenzene	146	17.68	0.975	A	2	A	B
90	T	n-Butylbenzene	91	17.95	0.990	A	2	A	B
91	T	1,2-Dichlorobenzene	146	18.16	1.002	A	2	A	B
92	T	1,2-Dibromo-3-chloropropane	157	19.08	1.053	A	2	A	B
93	T	1,2,4-Trichlorobenzene	180	20.05	1.106	A	2	A	B
94	T	Hexachlorobutadiene	225	20.20	1.114	A	2	A	B
95	T	Naphthalene	128	20.36	1.123	A	1	A	B
96	T	1,2,3-Trichlorobenzene	180	20.64	1.139	A	2	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

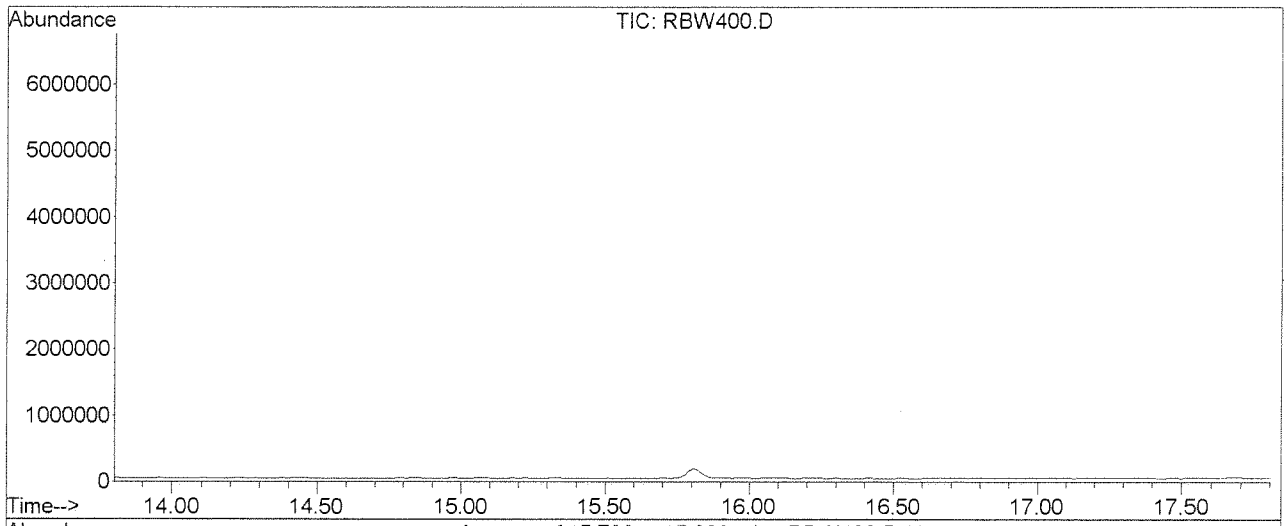
VO06B22.M Wed Feb 24 13:27:36 2016

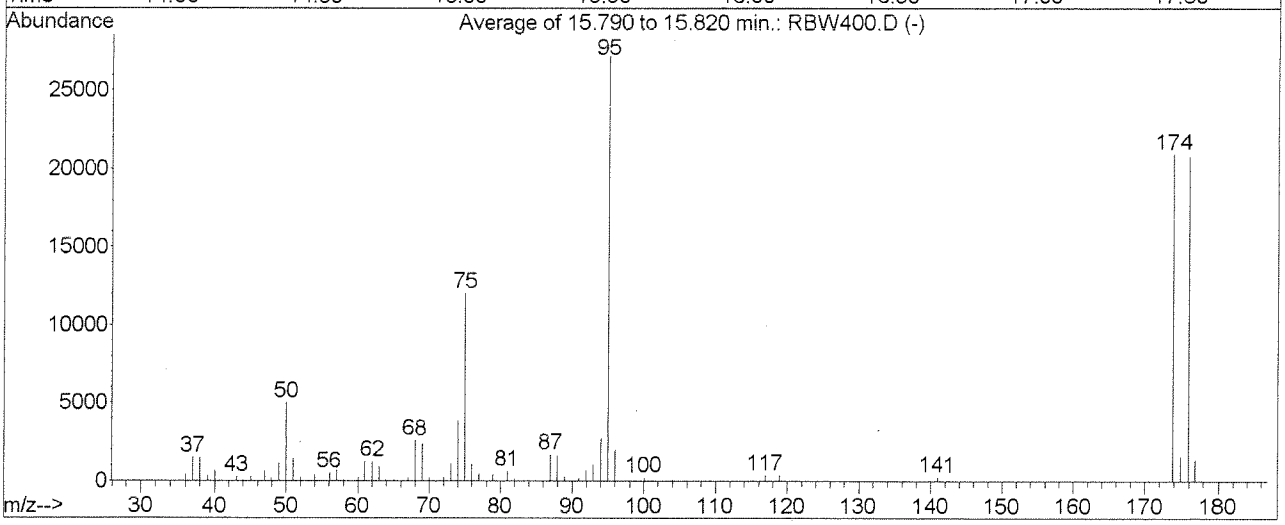
SW 2/25/16

BFB

Data File : D:\HPCHEM\1\DATA\16B22\RBW400.D
Acq On : 22 Feb 2016 2:35 pm
Sample : BFB06B15
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260

Vial: 1
Operator: ODinh
Inst : TO06
Multiplr: 1.00





AutoFind: Scans 947, 948, 949; Background Corrected with Scan 941

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.4	4994	PASS
75	95	30	60	44.2	12023	PASS
95	95	100	100	100.0	27206	PASS
96	95	5	9	7.1	1945	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.0	20941	PASS
175	174	5	9	7.5	1564	PASS
176	174	95	101	99.2	20764	PASS
177	176	5	9	6.6	1375	PASS

RBW400.D VO06B22.M Wed Feb 24 14:05:43 2016

SA 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW401.D Vial: 2
Acq On : 22 Feb 2016 3:06 pm Operator: ODinh
Sample : VO06B221 Inst : TO06
Misc : 0.3ppb 8260+3-ADD/1.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:39 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.92	114	1866294	10.00 ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1557184	10.00 ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.14	152	490555	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	7.41	111	14820	0.28 ug/l	0.00
Spiked Amount 10.000			Recovery	= 2.80%	
41) 1,2-Dichloroethane-d4	8.25	65	12055	0.31 ug/l	0.00
Spiked Amount 10.000			Recovery	= 3.10%	
54) Toluene-d8	11.39	98	59406	0.29 ug/l	0.00
Spiked Amount 10.000			Recovery	= 2.90%	
76) 4-Bromofluorobenzene	15.80	95	19512	0.33 ug/l	0.00
Spiked Amount 10.000			Recovery	= 3.30%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.82	85	19340	0.27 ug/l	81
3) Chloromethane	2.04	50	22612	0.29 ug/l	76
4) Vinyl chloride	2.18	62	23229	0.32 ug/l	100
5) Bromomethane	2.67	94	13439	0.28 ug/l	92
6) Chloroethane	2.79	64	12432	0.29 ug/l	92
7) Dichlorofluoromethane	2.82	67	36203	0.32 ug/l	98
8) Trichlorofluoromethane	3.07	101	19791	0.27 ug/l	92
9) Acrolein	3.61	56	3232	1.08 ug/l #	15
10) 1,1,2-Trichloro-1,2,2-trif	3.65	151	11198	0.31 ug/l	98
12) 1,1-Dichloroethene	3.86	61	30594	0.32 ug/l	97
16) Iodomethane	4.29	142	29895	0.32 ug/l	97
17) Methylene chloride	4.56	49	27778	0.41 ug/l	96
18) Carbon disulfide	4.56	76	66295	0.29 ug/l	87
19) Acrylonitrile	4.78	53	13121	1.64 ug/l	81
20) tert-Butyl methyl ether (M	4.81	73	29329	0.34 ug/l	83
21) trans-1,2-Dichloroethene	5.02	61	27359	0.31 ug/l	93
22) Isopropyl ether (DIPE)	5.57	45	60546	0.33 ug/l	89
24) 1,1-Dichloroethane	5.73	63	35039	0.33 ug/l	94
26) tert-Butyl ethyl ether (ET	6.30	59	44562	0.32 ug/l	89
28) 2,2-Dichloropropane	6.70	77	15756	0.32 ug/l	76
29) cis-1,2-Dichloroethene	6.77	96	22088	0.34 ug/l	94
30) Chloroform	7.04	83	31980	0.34 ug/l	92
32) Bromochloromethane	7.31	49	12567	0.30 ug/l	97
35) 1,1,1-Trichloroethane	7.73	97	25089	0.35 ug/l	91
36) Cyclohexane	7.73	56	38430	0.33 ug/l	98
38) 1,1-Dichloropropene	7.98	110	10052	0.32 ug/l	92
39) Carbon tetrachloride	8.13	119	20271	0.31 ug/l	91

(#) = qualifier out of range (m) = manual integration
RBW401.D VO06B22.M Wed Feb 24 14:05:50 2016 SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW401.D Vial: 2
Acq On : 22 Feb 2016 3:06 pm Operator: ODinh
Sample : VO06B221 Inst : TO06
Misc : 0.3ppb 8260+3-ADD/1.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:39 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
40)	tert-Amyl methyl ether (TA	8.19	87	6784	0.29 ug/l	#	83
42)	1,2-Dichloroethane	8.41	62	13765	0.31 ug/l		63
43)	Benzene	8.41	78	82249	0.34 ug/l		99
44)	Trichloroethene	9.42	130	20165	0.31 ug/l		91
45)	Methylcyclohexane	9.51	83	36218	0.34 ug/l		90
46)	1,2-Dichloropropane	9.72	63	19498	0.33 ug/l		87
48)	Bromodichloromethane	10.09	83	24106	0.37 ug/l		86
49)	Dibromomethane	10.18	93	7615	0.32 ug/l		88
50)	2-Chloroethyl vinyl ether	10.64	63	3934	0.30 ug/l	#	64
51)	4-Methyl-2-pentanone	10.69	43	25130	1.03 ug/l		88
52)	cis-1,3-Dichloropropene	11.00	75	26250	0.32 ug/l		94
55)	Toluene	11.50	91	88558	0.36 ug/l		95
56)	Ethyl methacrylate	11.83	69	9979	0.26 ug/l		76
57)	trans-1,3-Dichloropropene	11.82	75	22549	0.39 ug/l		78
58)	1,1,2-Trichloroethane	12.05	97	10264	0.32 ug/l		90
60)	1,3-Dichloropropane	12.47	76	17649	0.31 ug/l		82
61)	Tetrachloroethene	12.56	164	14405	0.30 ug/l		95
62)	Dibromochloromethane	12.89	129	11519	0.29 ug/l		95
64)	1,2-Dibromoethane	13.21	107	9427	0.31 ug/l		92
65)	1-Chlorohexane	13.48	91	33747	0.33 ug/l		93
66)	Chlorobenzene	13.88	112	45242	0.32 ug/l	#	89
67)	1,1,1,2-Tetrachloroethane	13.96	131	14540	0.31 ug/l	#	1
68)	Ethylbenzene	13.97	91	83313	0.32 ug/l		98
69)	m-Xylene & p-Xylene	14.11	91	119666	0.64 ug/l		99
70)	o-Xylene	14.81	91	61721	0.32 ug/l		96
71)	Styrene	14.87	104	47610	0.32 ug/l		95
72)	Isopropylbenzene	15.40	105	74140	0.33 ug/l		97
74)	Bromoform	15.42	173	5046	0.29 ug/l		89
75)	1,1,2,2-Tetrachloroethane	15.68	83	9419	0.31 ug/l		95
77)	1,2,3-Trichloropropane	15.92	110	2380	0.31 ug/l		65
78)	trans-1,4-Dichloro-2-buten	16.04	53	5510	0.63 ug/l		74
79)	n-Propylbenzene	16.06	91	98794	0.34 ug/l		97
80)	Bromobenzene	16.12	156	14371	0.32 ug/l		97
81)	1,3,5-Trimethylbenzene	16.31	105	59041	0.35 ug/l		96
82)	2-Chlorotoluene	16.34	91	60709	0.35 ug/l		99
83)	4-Chlorotoluene	16.41	91	42523	0.30 ug/l		97
84)	tert-Butylbenzene	16.89	134	14975	0.34 ug/l		91
85)	1,2,4-Trimethylbenzene	16.95	105	50969	0.32 ug/l		92
86)	sec-Butylbenzene	17.22	105	74216	0.33 ug/l		100
87)	p-Isopropyltoluene	17.41	119	60530	0.33 ug/l		97
88)	1,3-Dichlorobenzene	17.54	146	28107	0.32 ug/l		99

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

GW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW401.D Vial: 2
Acq On : 22 Feb 2016 3:06 pm Operator: ODinh
Sample : VO06B221 Inst : TO06
Misc : 0.3ppb 8260+3-ADD/1.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:39 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
89)	1,4-Dichlorobenzene	17.69	146	26202	0.31 ug/l		93
90)	n-Butylbenzene	17.96	91	57862	0.33 ug/l		98
91)	1,2-Dichlorobenzene	18.17	146	21748	0.30 ug/l	#	73
92)	1,2-Dibromo-3-chloropropan	19.08	157	1326	0.30 ug/l	#	51
93)	1,2,4-Trichlorobenzene	20.06	180	12453	0.28 ug/l		99
94)	Hexachlorobutadiene	20.21	225	8461	0.31 ug/l		95
95)	Naphthalene	20.35	128	18858	0.29 ug/l		98
96)	1,2,3-Trichlorobenzene	20.65	180	9995	0.29 ug/l		99

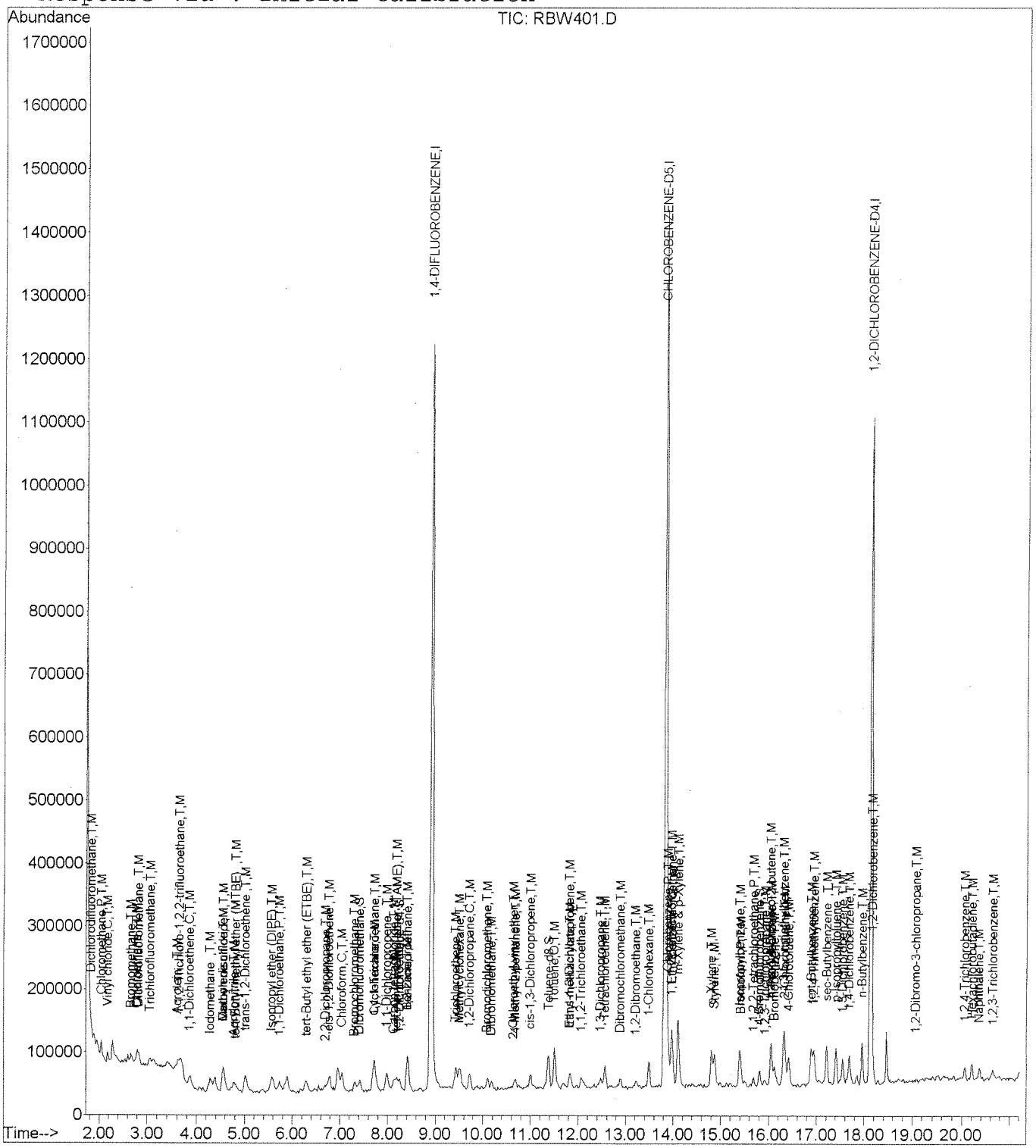
SU 2/25/16

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW401.D Vial: 2
Acq On : 22 Feb 2016 3:06 pm Operator: ODinh
Sample : VO06B221 Inst : TO06
Misc : 0.3ppb 8260+3-ADD/1.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:39 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/23/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW402.D Vial: 3
Acq On : 22 Feb 2016 3:31 pm Operator: ODinh
Sample : VO06B222 Inst : TO06
Misc : 0.5ppb 8260+3-ADD/2.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:40 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1832009	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1544858	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.13	152	495309	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.41	111	27145	0.52	ug/l	0.00
Spiked Amount 10.000			Recovery	=	5.20%	
41) 1,2-Dichloroethane-d4	8.24	65	20183	0.53	ug/l	0.00
Spiked Amount 10.000			Recovery	=	5.30%	
54) Toluene-d8	11.38	98	109326	0.54	ug/l	0.00
Spiked Amount 10.000			Recovery	=	5.40%	
76) 4-Bromofluorobenzene	15.80	95	33640	0.56	ug/l	0.00
Spiked Amount 10.000			Recovery	=	5.60%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.81	85	37750	0.53	ug/l	97
3) Chloromethane	2.05	50	38485	0.50	ug/l	97
4) Vinyl chloride	2.17	62	41070	0.58	ug/l	79
5) Bromomethane	2.68	94	24876	0.53	ug/l	91
6) Chloroethane	2.78	64	21857	0.52	ug/l	95
7) Dichlorofluoromethane	2.81	67	54477	0.49	ug/l	98
8) Trichlorofluoromethane	3.08	101	39176	0.54	ug/l	100
9) Acrolein	3.60	56	17643	6.02	ug/l #	60
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	15705	0.44	ug/l	92
11) Acetone	3.69	43	36088	4.63	ug/l	92
12) 1,1-Dichloroethene	3.87	61	45743	0.48	ug/l	100
16) Iodomethane	4.30	142	43468	0.47	ug/l	97
17) Methylene chloride	4.55	49	37197	0.55	ug/l	94
18) Carbon disulfide	4.55	76	136792	0.62	ug/l	99
19) Acrylonitrile	4.76	53	20351	2.59	ug/l	88
20) tert-Butyl methyl ether (M	4.80	73	42455	0.50	ug/l	94
21) trans-1,2-Dichloroethene	5.01	61	42591	0.50	ug/l	100
22) Isopropyl ether (DIPE)	5.56	45	84185	0.47	ug/l	90
23) Vinyl acetate	5.77	43	21748	0.41	ug/l	99
24) 1,1-Dichloroethane	5.73	63	52956	0.51	ug/l	94
26) tert-Butyl ethyl ether (ET	6.28	59	68130	0.50	ug/l	99
27) 2-Butanone	6.50	72	7592	3.26	ug/l #	54
28) 2,2-Dichloropropane	6.69	77	24771	0.51	ug/l	85
29) cis-1,2-Dichloroethene	6.77	96	31957	0.50	ug/l	97
30) Chloroform	7.03	83	47773	0.51	ug/l	91
32) Bromochloromethane	7.30	49	17777	0.44	ug/l	95
33) Tetrahydrofuran	7.38	42	4570	0.76	ug/l	79

(#) = qualifier out of range (m) = manual integration
RBW402.D VO06B22.M Wed Feb 24 14:06:00 2016 Sw 2/25/16 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW402.D Vial: 3
Acq On : 22 Feb 2016 3:31 pm Operator: ODinh
Sample : VO06B222 Inst : TO06
Misc : 0.5ppb 8260+3-ADD/2.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:40 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
35)	1,1,1-Trichloroethane	7.70	97	34334	0.49 ug/l		95
36)	Cyclohexane	7.70	56	59251	0.51 ug/l		98
38)	1,1-Dichloropropene	7.97	110	14675	0.48 ug/l		97
39)	Carbon tetrachloride	8.12	119	30657	0.48 ug/l		98
40)	tert-Amyl methyl ether (TA	8.19	87	15468	0.66 ug/l	#	68
42)	1,2-Dichloroethane	8.40	62	20223	0.46 ug/l		64
43)	Benzene	8.40	78	118374	0.51 ug/l		99
44)	Trichloroethene	9.43	130	30048	0.47 ug/l		94
45)	Methylcyclohexane	9.50	83	53534	0.52 ug/l		96
46)	1,2-Dichloropropane	9.71	63	27988	0.48 ug/l		90
47)	1,4-Dioxane	10.14	88	2246	9.80 ug/l	#	61
48)	Bromodichloromethane	10.10	83	30480	0.47 ug/l		94
49)	Dibromomethane	10.17	93	11235	0.48 ug/l		92
50)	2-Chloroethyl vinyl ether	10.63	63	5847	0.46 ug/l		87
51)	4-Methyl-2-pentanone	10.68	43	54925	2.30 ug/l		97
52)	cis-1,3-Dichloropropene	10.99	75	36499	0.46 ug/l		96
55)	Toluene	11.50	91	124009	0.51 ug/l		95
56)	Ethyl methacrylate	11.82	69	16734	0.44 ug/l		96
57)	trans-1,3-Dichloropropene	11.81	75	24482	0.42 ug/l		96
58)	1,1,2-Trichloroethane	12.06	97	16618	0.52 ug/l		84
59)	2-Hexanone	12.09	43	30547	2.16 ug/l		97
60)	1,3-Dichloropropane	12.46	76	26662	0.46 ug/l		94
61)	Tetrachloroethene	12.55	164	20714	0.44 ug/l		96
62)	Dibromochloromethane	12.88	129	17645	0.45 ug/l		97
64)	1,2-Dibromoethane	13.21	107	14362	0.47 ug/l		95
65)	1-Chlorohexane	13.49	91	47194	0.46 ug/l		97
66)	Chlorobenzene	13.89	112	65026	0.46 ug/l		94
67)	1,1,1,2-Tetrachloroethane	13.95	131	21260	0.46 ug/l	#	68
68)	Ethylbenzene	13.98	91	116444	0.45 ug/l		99
69)	m-Xylene & p-Xylene	14.10	91	176518	0.95 ug/l		99
70)	o-Xylene	14.80	91	89932	0.47 ug/l		99
71)	Styrene	14.87	104	67132	0.45 ug/l		97
72)	Isopropylbenzene	15.39	105	104149	0.46 ug/l		97
74)	Bromoform	15.41	173	7695	0.43 ug/l		98
75)	1,1,2,2-Tetrachloroethane	15.68	83	15045	0.49 ug/l		97
77)	1,2,3-Trichloropropane	15.91	110	4244	0.54 ug/l		100
78)	trans-1,4-Dichloro-2-buten	16.05	53	6160	0.69 ug/l		71
79)	n-Propylbenzene	16.05	91	136901	0.47 ug/l		98
80)	Bromobenzene	16.12	156	21049	0.46 ug/l		94
81)	1,3,5-Trimethylbenzene	16.30	105	82266	0.49 ug/l		98
82)	2-Chlorotoluene	16.33	91	84556	0.49 ug/l		100

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

S 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW402.D Vial: 3
Acq On : 22 Feb 2016 3:31 pm Operator: ODinh
Sample : VO06B222 Inst : TO06
Misc : 0.5ppb 8260+3-ADD/2.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:40 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
83)	4-Chlorotoluene	16.41	91	70686	0.49 ug/l	99
84)	tert-Butylbenzene	16.88	134	21017	0.47 ug/l	97
85)	1,2,4-Trimethylbenzene	16.94	105	81618	0.51 ug/l	95
86)	sec-Butylbenzene	17.21	105	106209	0.47 ug/l	98
87)	p-Isopropyltoluene	17.40	119	86403	0.47 ug/l	94
88)	1,3-Dichlorobenzene	17.54	146	41252	0.47 ug/l	97
89)	1,4-Dichlorobenzene	17.68	146	39963	0.47 ug/l	96
90)	n-Butylbenzene	17.95	91	82673	0.46 ug/l	99
91)	1,2-Dichlorobenzene	18.16	146	34377	0.48 ug/l	87
92)	1,2-Dibromo-3-chloropropan	19.08	157	2022	0.46 ug/l	94
93)	1,2,4-Trichlorobenzene	20.05	180	19796	0.45 ug/l	93
94)	Hexachlorobutadiene	20.20	225	12493	0.45 ug/l	94
95)	Naphthalene	20.36	128	29581	0.45 ug/l	98
96)	1,2,3-Trichlorobenzene	20.64	180	15001	0.44 ug/l	98

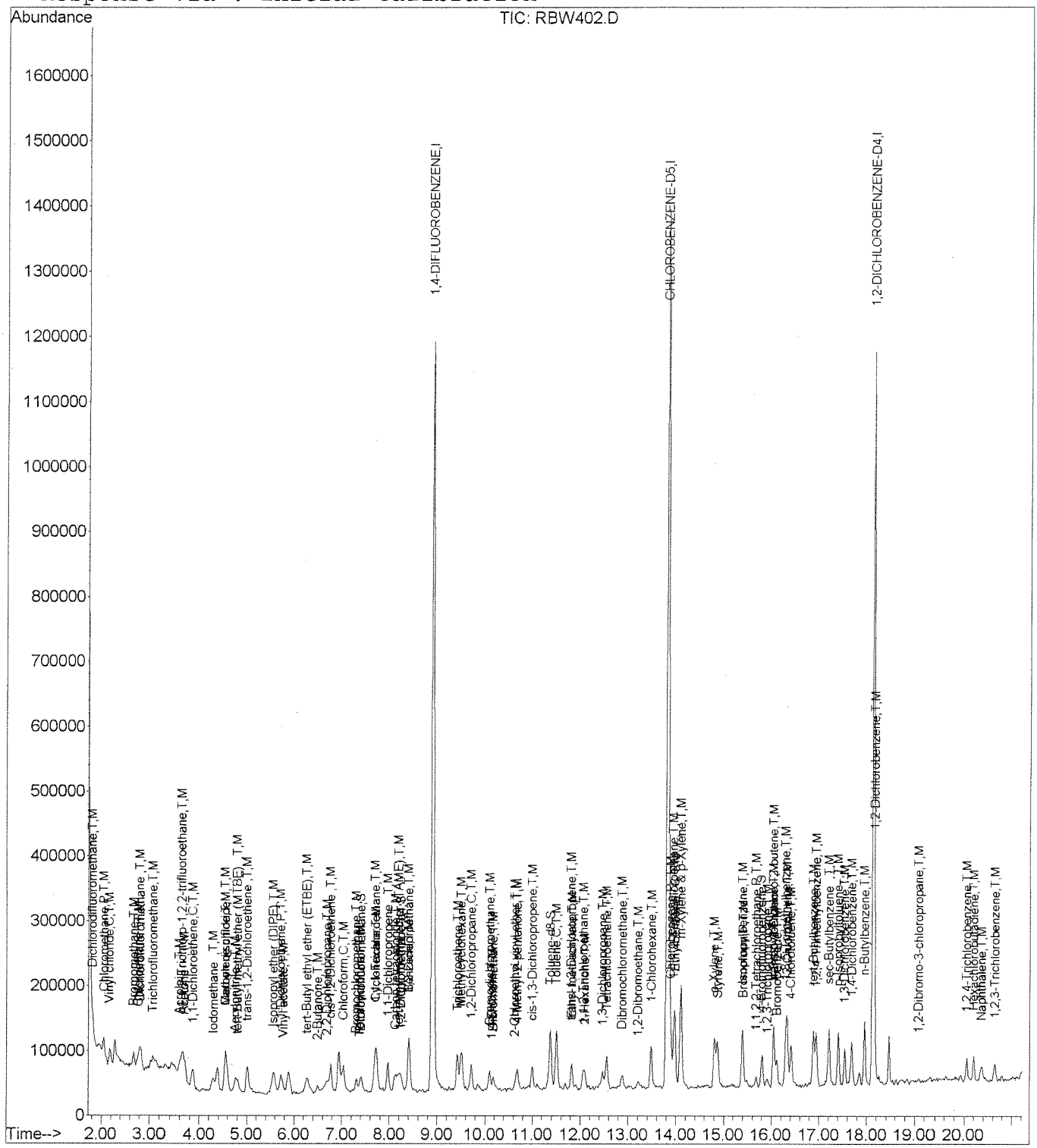
SM 2/25/16

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW402.D Vial: 3
Acq On : 22 Feb 2016 3:31 pm Operator: ODinh
Sample : VO06B222 Inst : TO06
Misc : 0.5ppb 8260+3-ADD/2.5ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:40 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW403.D Vial: 4
Acq On : 22 Feb 2016 3:57 pm Operator: ODinh
Sample : VO06B223 Inst : TO06
Misc : 1.0ppb 8260+3-ADD/5.0ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1762660	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1460780	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.13	152	494465	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.41	111	51039	1.02	ug/l	0.00
Spiked Amount 10.000			Recovery	=	10.20%	
41) 1,2-Dichloroethane-d4	8.24	65	39092	1.07	ug/l	0.00
Spiked Amount 10.000			Recovery	=	10.70%	
54) Toluene-d8	11.38	98	207578	1.09	ug/l	0.00
Spiked Amount 10.000			Recovery	=	10.90%	
76) 4-Bromofluorobenzene	15.79	95	64168	1.07	ug/l	0.00
Spiked Amount 10.000			Recovery	=	10.70%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.81	85	60021	0.87	ug/l	95
3) Chloromethane	2.05	50	66768	0.89	ug/l	96
4) Vinyl chloride	2.17	62	68235	0.99	ug/l	97
5) Bromomethane	2.68	94	40594	0.90	ug/l	92
6) Chloroethane	2.78	64	38714	0.95	ug/l	100
7) Dichlorofluoromethane	2.81	67	91555	0.86	ug/l	97
8) Trichlorofluoromethane	3.08	101	69949	1.01	ug/l	92
9) Acrolein	3.60	56	22767	8.07	ug/l #	62
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	29989	0.88	ug/l	99
11) Acetone	3.69	43	33642	4.36	ug/l #	79
12) 1,1-Dichloroethene	3.87	61	82138	0.90	ug/l	99
13) tert-Butyl alcohol	3.99	59	10937	6.18	ug/l #	1
15) Methyl acetate	4.34	43	33792	1.05	ug/l	77
16) Iodomethane	4.28	142	76205	0.86	ug/l	99
17) Methylene chloride	4.57	49	62602	0.97	ug/l	98
18) Carbon disulfide	4.55	76	203356	0.95	ug/l	94
19) Acrylonitrile	4.76	53	33021	4.37	ug/l	94
20) tert-Butyl methyl ether (M	4.80	73	76373	0.94	ug/l	89
21) trans-1,2-Dichloroethene	5.01	61	73509	0.89	ug/l	99
22) Isopropyl ether (DIPE)	5.56	45	153587	0.88	ug/l	96
23) Vinyl acetate	5.77	43	44447	0.86	ug/l	97
24) 1,1-Dichloroethane	5.73	63	90003	0.89	ug/l	95
25) 2-Butanol	6.14	45	6262	4.10	ug/l	76
26) tert-Butyl ethyl ether (ET	6.28	59	121659	0.94	ug/l	97
27) 2-Butanone	6.48	72	10403	4.64	ug/l #	81
28) 2,2-Dichloropropane	6.69	77	44301	0.94	ug/l	91
29) cis-1,2-Dichloroethene	6.77	96	54248	0.89	ug/l	88

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

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW403.D Vial: 4
Acq On : 22 Feb 2016 3:57 pm Operator: ODinh
Sample : VO06B223 Inst : TO06
Misc : 1.0ppb 8260+3-ADD/5.0ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
30)	Chloroform	7.03	83	85078	0.95 ug/l		99
32)	Bromochloromethane	7.30	49	35188	0.90 ug/l		95
33)	Tetrahydrofuran	7.38	42	6271	1.09 ug/l	#	48
35)	1,1,1-Trichloroethane	7.70	97	61520	0.92 ug/l		96
36)	Cyclohexane	7.70	56	104941	0.94 ug/l		99
38)	1,1-Dichloropropene	7.97	110	26183	0.88 ug/l		99
39)	Carbon tetrachloride	8.12	119	56189	0.91 ug/l		100
40)	tert-Amyl methyl ether (TA	8.19	87	22813	1.02 ug/l	#	80
42)	1,2-Dichloroethane	8.40	62	39089	0.92 ug/l		87
43)	Benzene	8.40	78	206559	0.92 ug/l		99
44)	Trichloroethene	9.43	130	54569	0.88 ug/l		97
45)	Methylcyclohexane	9.50	83	92145	0.93 ug/l		98
46)	1,2-Dichloropropane	9.71	63	50064	0.90 ug/l		97
47)	1,4-Dioxane	10.14	88	4767	21.62 ug/l		96
48)	Bromodichloromethane	10.10	83	56452	0.91 ug/l		96
49)	Dibromomethane	10.17	93	20448	0.90 ug/l		94
50)	2-Chloroethyl vinyl ether	10.63	63	11061	0.90 ug/l		96
51)	4-Methyl-2-pentanone	10.68	43	101685	4.43 ug/l		97
52)	cis-1,3-Dichloropropene	10.99	75	67942	0.88 ug/l		96
55)	Toluene	11.50	91	215506	0.94 ug/l		97
56)	Ethyl methacrylate	11.82	69	32042	0.90 ug/l		90
57)	trans-1,3-Dichloropropene	11.81	75	47041	0.86 ug/l		95
58)	1,1,2-Trichloroethane	12.06	97	27812	0.93 ug/l		94
59)	2-Hexanone	12.09	43	57587	4.31 ug/l		92
60)	1,3-Dichloropropane	12.48	76	51423	0.95 ug/l		100
61)	Tetrachloroethene	12.55	164	40694	0.91 ug/l		98
62)	Dibromochloromethane	12.88	129	33931	0.92 ug/l		98
64)	1,2-Dibromoethane	13.21	107	26051	0.91 ug/l		98
65)	1-Chlorohexane	13.49	91	90120	0.93 ug/l		98
66)	Chlorobenzene	13.89	112	121321	0.90 ug/l		94
67)	1,1,1,2-Tetrachloroethane	13.97	131	40701	0.93 ug/l		87
68)	Ethylbenzene	13.98	91	227783	0.94 ug/l		99
69)	m-Xylene & p-Xylene	14.10	91	325571	1.85 ug/l		99
70)	o-Xylene	14.80	91	167801	0.92 ug/l		100
71)	Styrene	14.87	104	127717	0.91 ug/l		94
72)	Isopropylbenzene	15.39	105	196806	0.92 ug/l		98
74)	Bromoform	15.41	173	16345	0.92 ug/l		97
75)	1,1,2,2-Tetrachloroethane	15.68	83	29571	0.96 ug/l		100
77)	1,2,3-Trichloropropane	15.93	110	7187	0.92 ug/l		74
78)	trans-1,4-Dichloro-2-buten	16.03	53	10955	1.24 ug/l		87
79)	n-Propylbenzene	16.05	91	272791	0.94 ug/l		98

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

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW403.D Vial: 4
Acq On : 22 Feb 2016 3:57 pm Operator: ODinh
Sample : VO06B223 Inst : TO06
Misc : 1.0ppb 8260+3-ADD/5.0ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.12	156	42224	0.93 ug/l	97
81)	1,3,5-Trimethylbenzene	16.30	105	151786	0.91 ug/l	100
82)	2-Chlorotoluene	16.33	91	165193	0.95 ug/l	99
83)	4-Chlorotoluene	16.40	91	127648	0.89 ug/l	98
84)	tert-Butylbenzene	16.88	134	40685	0.90 ug/l	98
85)	1,2,4-Trimethylbenzene	16.94	105	152194	0.94 ug/l	97
86)	sec-Butylbenzene	17.21	105	211306	0.93 ug/l	100
87)	p-Isopropyltoluene	17.40	119	159738	0.87 ug/l	99
88)	1,3-Dichlorobenzene	17.53	146	80323	0.92 ug/l	100
89)	1,4-Dichlorobenzene	17.68	146	75085	0.89 ug/l	99
90)	n-Butylbenzene	17.95	91	161581	0.91 ug/l	98
91)	1,2-Dichlorobenzene	18.16	146	64397	0.89 ug/l	88
92)	1,2-Dibromo-3-chloropropan	19.08	157	4415	1.00 ug/l	93
93)	1,2,4-Trichlorobenzene	20.05	180	38902	0.88 ug/l	97
94)	Hexachlorobutadiene	20.20	225	25414	0.91 ug/l	99
95)	Naphthalene	20.36	128	58857	0.90 ug/l	98
96)	1,2,3-Trichlorobenzene	20.64	180	30962	0.91 ug/l	99

(#) = qualifier out of range (m) = manual integration
RBW403.D VO06B22.M Wed Feb 24 14:06:12 2016 SV 2/25/16

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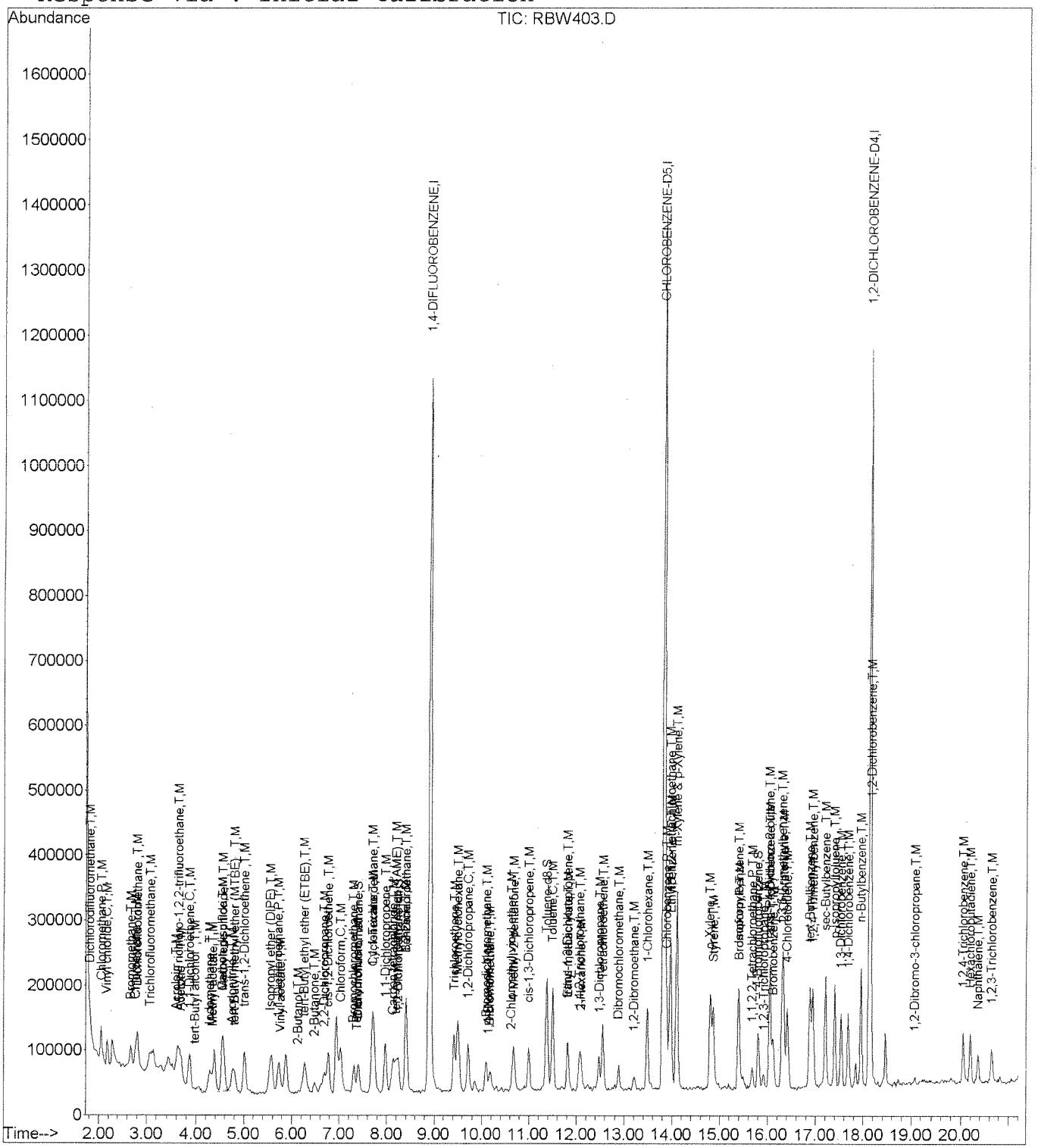
Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW403.D Vial: 4
Acq On : 22 Feb 2016 3:57 pm Operator: ODinh
Sample : VO06B223 Inst : TO06
Misc : 1.0ppb 8260+3-ADD/5.0ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/25/16

217

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW404.D Vial: 5
Acq On : 22 Feb 2016 4:22 pm Operator: ODinh
Sample : VO06B224 Inst : TO06
Misc : 2.0ppb 8260+3-ADD/10ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.90	114	1750967	10.00 ug/l	0.00
53) CHLOROBENZENE-D5	13.83	117	1488394	10.00 ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.14	152	501637	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	7.41	111	98342	1.98 ug/l	0.00
Spiked Amount 10.000			Recovery	= 19.80%	
41) 1,2-Dichloroethane-d4	8.25	65	71364	1.97 ug/l	0.00
Spiked Amount 10.000			Recovery	= 19.70%	
54) Toluene-d8	11.37	98	388828	2.00 ug/l	0.00
Spiked Amount 10.000			Recovery	= 20.00%	
76) 4-Bromofluorobenzene	15.80	95	114542	1.88 ug/l	0.00
Spiked Amount 10.000			Recovery	= 18.80%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.82	85	122654	1.79 ug/l	99
3) Chloromethane	2.05	50	149512	2.01 ug/l	97
4) Vinyl chloride	2.18	62	142207	2.08 ug/l	97
5) Bromomethane	2.68	94	86735	1.93 ug/l	99
6) Chloroethane	2.79	64	84513	2.09 ug/l	97
7) Dichlorofluoromethane	2.82	67	206347	1.94 ug/l	98
8) Trichlorofluoromethane	3.09	101	123095	1.79 ug/l	96
9) Acrolein	3.59	56	35995	12.85 ug/l	95
10) 1,1,2-Trichloro-1,2,2-trif	3.65	151	64204	1.89 ug/l	99
11) Acetone	3.68	43	57213	10.24 ug/l	95
12) 1,1-Dichloroethene	3.86	61	173973	1.92 ug/l	99
13) tert-Butyl alcohol	3.98	59	18847	10.71 ug/l #	72
15) Methyl acetate	4.34	43	45652	1.81 ug/l	91
16) Iodomethane	4.31	142	168722	1.92 ug/l	99
17) Methylene chloride	4.56	49	127091	1.98 ug/l	96
18) Carbon disulfide	4.56	76	406842	1.92 ug/l	100
19) Acrylonitrile	4.77	53	73018	9.74 ug/l	92
20) tert-Butyl methyl ether (M	4.81	73	159599	1.98 ug/l	99
21) trans-1,2-Dichloroethene	5.01	61	161682	1.97 ug/l	99
22) Isopropyl ether (DIPE)	5.56	45	334787	1.94 ug/l	97
23) Vinyl acetate	5.76	43	98473	1.93 ug/l	97
24) 1,1-Dichloroethane	5.72	63	192278	1.92 ug/l	98
25) 2-Butanol	6.15	45	11568	7.63 ug/l #	1
26) tert-Butyl ethyl ether (ET	6.28	59	256878	1.99 ug/l	100
27) 2-Butanone	6.48	72	21058	9.45 ug/l	88
28) 2,2-Dichloropropane	6.70	77	96086	2.06 ug/l	97
29) cis-1,2-Dichloroethene	6.78	96	121293	2.00 ug/l	97

(#) = qualifier out of range (m) = manual integration SV 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW404.D Vial: 5
Acq On : 22 Feb 2016 4:22 pm Operator: ODinh
Sample : VO06B224 Inst : TO06
Misc : 2.0ppb 8260+3-ADD/10ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
30)	Chloroform	7.04	83	175482	1.97 ug/l		98
32)	Bromochloromethane	7.31	49	73943	1.90 ug/l		98
33)	Tetrahydrofuran	7.38	42	11663	2.03 ug/l		88
35)	1,1,1-Trichloroethane	7.70	97	130932	1.97 ug/l		98
36)	Cyclohexane	7.71	56	218518	1.97 ug/l		99
38)	1,1-Dichloropropene	7.98	110	56898	1.93 ug/l		100
39)	Carbon tetrachloride	8.11	119	117910	1.93 ug/l		99
40)	tert-Amyl methyl ether (TA	8.19	87	45706	2.05 ug/l	#	92
42)	1,2-Dichloroethane	8.40	62	83378	1.98 ug/l		95
43)	Benzene	8.41	78	447406	2.00 ug/l		99
44)	Trichloroethene	9.42	130	116507	1.89 ug/l		95
45)	Methylcyclohexane	9.51	83	193419	1.96 ug/l		98
46)	1,2-Dichloropropane	9.72	63	108290	1.96 ug/l		96
47)	1,4-Dioxane	10.15	88	8501	38.81 ug/l		93
48)	Bromodichloromethane	10.09	83	114739	1.86 ug/l		99
49)	Dibromomethane	10.18	93	43668	1.95 ug/l		99
50)	2-Chloroethyl vinyl ether	10.63	63	23556	1.93 ug/l		95
51)	4-Methyl-2-pentanone	10.67	43	224642	9.85 ug/l		99
52)	cis-1,3-Dichloropropene	11.00	75	145779	1.90 ug/l		99
55)	Toluene	11.50	91	465800	1.99 ug/l		98
56)	Ethyl methacrylate	11.82	69	68114	1.88 ug/l		98
57)	trans-1,3-Dichloropropene	11.82	75	101167	1.82 ug/l		98
58)	1,1,2-Trichloroethane	12.06	97	58389	1.91 ug/l		97
59)	2-Hexanone	12.08	43	128114	9.42 ug/l		98
60)	1,3-Dichloropropane	12.47	76	107027	1.94 ug/l		100
61)	Tetrachloroethene	12.56	164	89613	1.97 ug/l		99
62)	Dibromochloromethane	12.89	129	72885	1.94 ug/l		100
64)	1,2-Dibromoethane	13.22	107	55180	1.88 ug/l		98
65)	1-Chlorohexane	13.48	91	192071	1.94 ug/l		98
66)	Chlorobenzene	13.88	112	264270	1.93 ug/l		95
67)	1,1,1,2-Tetrachloroethane	13.96	131	85787	1.93 ug/l		94
68)	Ethylbenzene	13.97	91	483301	1.95 ug/l		100
69)	m-Xylene & p-Xylene	14.09	91	729585	4.06 ug/l		100
70)	o-Xylene	14.81	91	363799	1.96 ug/l		99
71)	Styrene	14.87	104	281392	1.96 ug/l		100
72)	Isopropylbenzene	15.39	105	422588	1.94 ug/l		99
74)	Bromoform	15.42	173	35095	1.95 ug/l		98
75)	1,1,2,2-Tetrachloroethane	15.68	83	63599	2.04 ug/l		98
77)	1,2,3-Trichloropropane	15.92	110	15315	1.94 ug/l		83
78)	trans-1,4-Dichloro-2-buten	16.03	53	17848	1.99 ug/l		99
79)	n-Propylbenzene	16.04	91	595567	2.03 ug/l		99

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

SW 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW404.D Vial: 5
Acq On : 22 Feb 2016 4:22 pm Operator: ODinh
Sample : VO06B224 Inst : TO06
Misc : 2.0ppb 8260+3-ADD/10ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.12	156	90024	1.96 ug/l	95
81)	1,3,5-Trimethylbenzene	16.31	105	341012	2.00 ug/l	100
82)	2-Chlorotoluene	16.34	91	349433	1.98 ug/l	99
83)	4-Chlorotoluene	16.41	91	297907	2.05 ug/l	100
84)	tert-Butylbenzene	16.89	134	86778	1.90 ug/l	97
85)	1,2,4-Trimethylbenzene	16.95	105	319446	1.95 ug/l	99
86)	sec-Butylbenzene	17.22	105	452169	1.96 ug/l	99
87)	p-Isopropyltoluene	17.41	119	367389	1.98 ug/l	98
88)	1,3-Dichlorobenzene	17.54	146	173524	1.95 ug/l	100
89)	1,4-Dichlorobenzene	17.69	146	165148	1.93 ug/l	99
90)	n-Butylbenzene	17.96	91	343930	1.91 ug/l	99
91)	1,2-Dichlorobenzene	18.17	146	140835	1.92 ug/l	97
92)	1,2-Dibromo-3-chloropropan	19.08	157	7998	1.79 ug/l	88
93)	1,2,4-Trichlorobenzene	20.06	180	85148	1.89 ug/l	99
94)	Hexachlorobutadiene	20.21	225	53508	1.89 ug/l	99
95)	Naphthalene	20.35	128	130879	1.98 ug/l	97
96)	1,2,3-Trichlorobenzene	20.65	180	68126	1.96 ug/l	98

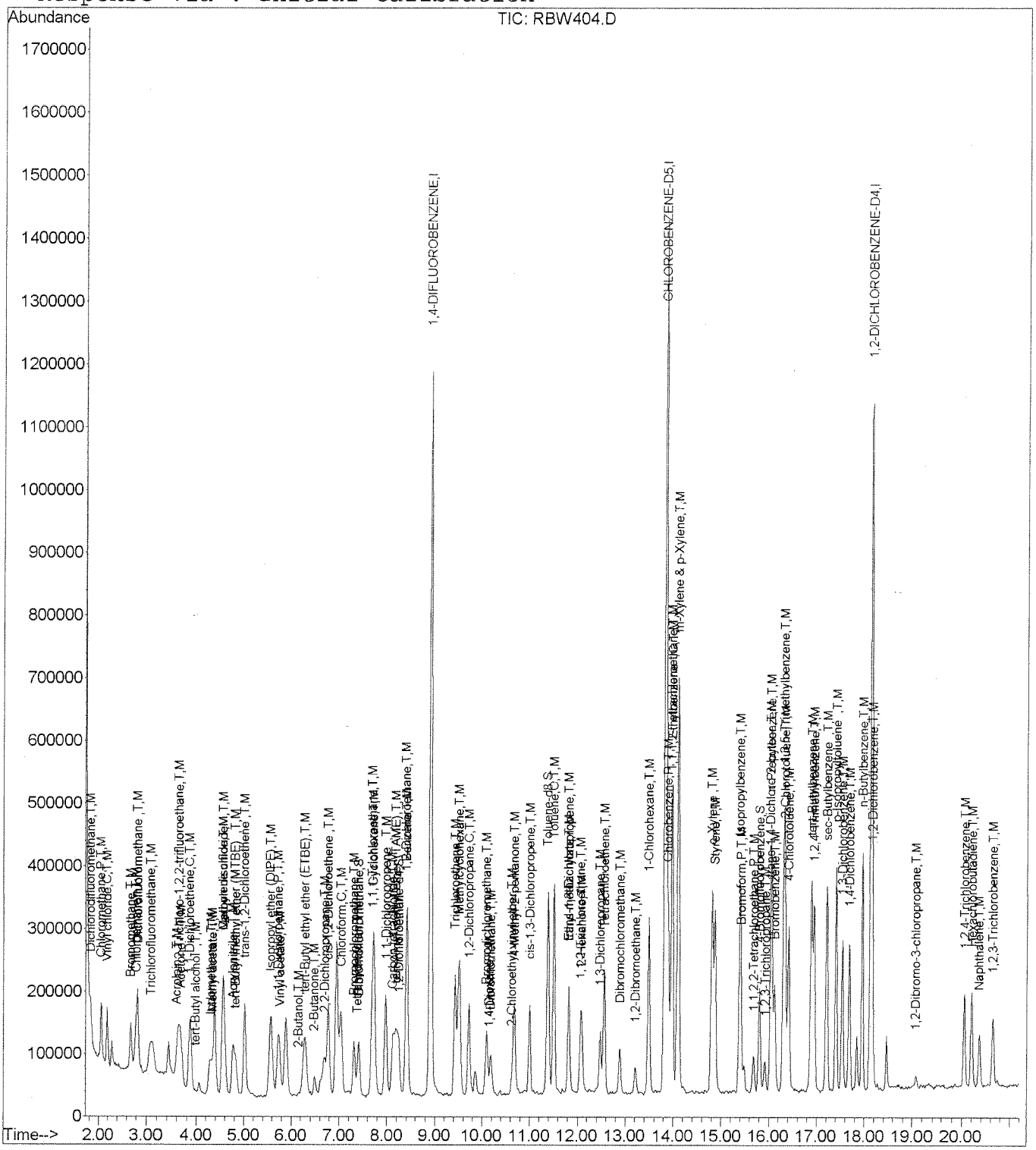
SW 2/25/16

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW404.D Vial: 5
Acq On : 22 Feb 2016 4:22 pm Operator: ODinh
Sample : VO06B224 Inst : TO06
Misc : 2.0ppb 8260+3-ADD/10ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW405.D Vial: 6
Acq On : 22 Feb 2016 4:47 pm Operator: ODinh
Sample : VO06B225 Inst : TO06
Misc : 5.0ppb 8260+3-ADD/25ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.90	114	1765669	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.83	117	1515539	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.14	152	527710	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.40	111	259440	5.18	ug/l	0.00
Spiked Amount 10.000			Recovery	=	51.80%	
41) 1,2-Dichloroethane-d4	8.25	65	191306	5.22	ug/l	0.00
Spiked Amount 10.000			Recovery	=	52.20%	
54) Toluene-d8	11.37	98	999601	5.04	ug/l	0.00
Spiked Amount 10.000			Recovery	=	50.40%	
76) 4-Bromofluorobenzene	15.80	95	324962	5.07	ug/l	0.00
Spiked Amount 10.000			Recovery	=	50.70%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.82	85	325312	4.72	ug/l	99
3) Chloromethane	2.05	50	384994	5.14	ug/l	98
4) Vinyl chloride	2.18	62	348558	5.06	ug/l	99
5) Bromomethane	2.68	94	227081	5.00	ug/l	98
6) Chloroethane	2.77	64	199644	4.90	ug/l	99
7) Dichlorofluoromethane	2.82	67	541882	5.06	ug/l	99
8) Trichlorofluoromethane	3.07	101	343057	4.95	ug/l	99
9) Acrolein	3.59	56	71800	25.41	ug/l	96
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	162804	4.75	ug/l	100
11) Acetone	3.68	43	124357	26.57	ug/l	96
12) 1,1-Dichloroethene	3.86	61	444547	4.87	ug/l	99
13) tert-Butyl alcohol	3.98	59	42714	24.08	ug/l	94
15) Methyl acetate	4.34	43	92967	4.74	ug/l	96
16) Iodomethane	4.31	142	450367	5.07	ug/l	99
17) Methylene chloride	4.54	49	329935	5.09	ug/l	98
18) Carbon disulfide	4.56	76	1041602	4.87	ug/l	100
19) Acrylonitrile	4.75	53	197574	26.13	ug/l	99
20) tert-Butyl methyl ether (M	4.80	73	420105	5.18	ug/l	100
21) trans-1,2-Dichloroethene	5.01	61	406175	4.91	ug/l	99
22) Isopropyl ether (DIPE)	5.56	45	907856	5.22	ug/l	100
23) Vinyl acetate	5.75	43	270082	5.24	ug/l	100
24) 1,1-Dichloroethane	5.72	63	494769	4.91	ug/l	100
25) 2-Butanol	6.14	45	41007	26.81	ug/l #	1
26) tert-Butyl ethyl ether (ET	6.27	59	664718	5.11	ug/l	100
27) 2-Butanone	6.48	72	58375	25.98	ug/l	99
28) 2,2-Dichloropropane	6.69	77	241086	5.12	ug/l	100
29) cis-1,2-Dichloroethene	6.78	96	303391	4.96	ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW405.D Vial: 6
Acq On : 22 Feb 2016 4:47 pm Operator: ODinh
Sample : VO06B225 Inst : TO06
Misc : 5.0ppb 8260+3-ADD/25ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.04	83	443918	4.95 ug/l	100
32)	Bromochloromethane	7.31	49	210211	5.36 ug/l	99
33)	Tetrahydrofuran	7.37	42	30373	5.25 ug/l	96
35)	1,1,1-Trichloroethane	7.71	97	324230	4.84 ug/l	99
36)	Cyclohexane	7.71	56	546837	4.89 ug/l	100
38)	1,1-Dichloropropene	7.96	110	141892	4.78 ug/l	99
39)	Carbon tetrachloride	8.11	119	297268	4.83 ug/l	99
40)	tert-Amyl methyl ether (TA	8.19	87	112195	4.99 ug/l	99
42)	1,2-Dichloroethane	8.40	62	226047	5.31 ug/l	97
43)	Benzene	8.41	78	1135769	5.03 ug/l	99
44)	Trichloroethene	9.42	130	308189	4.96 ug/l	98
45)	Methylcyclohexane	9.51	83	478960	4.81 ug/l	98
46)	1,2-Dichloropropane	9.72	63	277136	4.98 ug/l	100
47)	1,4-Dioxane	10.14	88	22826	103.34 ug/l	89
48)	Bromodichloromethane	10.09	83	310111	4.99 ug/l	99
49)	Dibromomethane	10.17	93	117926	5.21 ug/l	99
50)	2-Chloroethyl vinyl ether	10.63	63	64207	5.21 ug/l	98
51)	4-Methyl-2-pentanone	10.67	43	623723	27.12 ug/l	100
52)	cis-1,3-Dichloropropene	11.00	75	396011	5.12 ug/l	100
55)	Toluene	11.50	91	1159972	4.87 ug/l	99
56)	Ethyl methacrylate	11.82	69	194217	5.26 ug/l	100
57)	trans-1,3-Dichloropropene	11.82	75	284801	5.03 ug/l	99
58)	1,1,2-Trichloroethane	12.06	97	161005	5.18 ug/l	98
59)	2-Hexanone	12.08	43	380909	27.51 ug/l	99
60)	1,3-Dichloropropane	12.47	76	294599	5.23 ug/l	98
61)	Tetrachloroethene	12.56	164	224339	4.85 ug/l	99
62)	Dibromochloromethane	12.89	129	195402	5.12 ug/l	99
64)	1,2-Dibromoethane	13.20	107	153659	5.15 ug/l	98
65)	1-Chlorohexane	13.48	91	470416	4.66 ug/l	99
66)	Chlorobenzene	13.88	112	706374	5.06 ug/l	99
67)	1,1,1,2-Tetrachloroethane	13.96	131	226875	5.01 ug/l	99
68)	Ethylbenzene	13.97	91	1276427	5.06 ug/l	100
69)	m-Xylene & p-Xylene	14.09	91	1827732	9.99 ug/l	99
70)	o-Xylene	14.81	91	962928	5.09 ug/l	100
71)	Styrene	14.87	104	737039	5.04 ug/l	99
72)	Isopropylbenzene	15.39	105	1098737	4.95 ug/l	99
74)	Bromoform	15.42	173	96969	5.13 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.67	83	170669	5.19 ug/l	98
77)	1,2,3-Trichloropropane	15.92	110	42795	5.15 ug/l	93
78)	trans-1,4-Dichloro-2-buten	16.03	53	47230	5.00 ug/l	94
79)	n-Propylbenzene	16.04	91	1494373	4.83 ug/l	100

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

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW405.D Vial: 6
Acq On : 22 Feb 2016 4:47 pm Operator: ODinh
Sample : VO06B225 Inst : TO06
Misc : 5.0ppb 8260+3-ADD/25ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.12	156	240166	4.96 ug/l	98
81)	1,3,5-Trimethylbenzene	16.31	105	870251	4.86 ug/l	99
82)	2-Chlorotoluene	16.34	91	892739	4.82 ug/l	100
83)	4-Chlorotoluene	16.41	91	799053	5.23 ug/l	99
84)	tert-Butylbenzene	16.89	134	233072	4.85 ug/l	99
85)	1,2,4-Trimethylbenzene	16.93	105	855544	4.97 ug/l	99
86)	sec-Butylbenzene	17.20	105	1198786	4.93 ug/l	100
87)	p-Isopropyltoluene	17.41	119	941397	4.82 ug/l	100
88)	1,3-Dichlorobenzene	17.54	146	465167	4.97 ug/l	99
89)	1,4-Dichlorobenzene	17.69	146	457990	5.10 ug/l	99
90)	n-Butylbenzene	17.96	91	925674	4.88 ug/l	100
91)	1,2-Dichlorobenzene	18.17	146	392641	5.10 ug/l	99
92)	1,2-Dibromo-3-chloropropan	19.08	157	24019	5.11 ug/l	96
93)	1,2,4-Trichlorobenzene	20.06	180	239114	5.05 ug/l	99
94)	Hexachlorobutadiene	20.21	225	143440	4.82 ug/l	99
95)	Naphthalene	20.35	128	358284	5.16 ug/l	99
96)	1,2,3-Trichlorobenzene	20.65	180	181556	4.98 ug/l	99

(#) = qualifier out of range (m) = manual integration
RBW405.D VO06B22.M Wed Feb 24 14:06:35 2016 SV 2/25/16 Page 3

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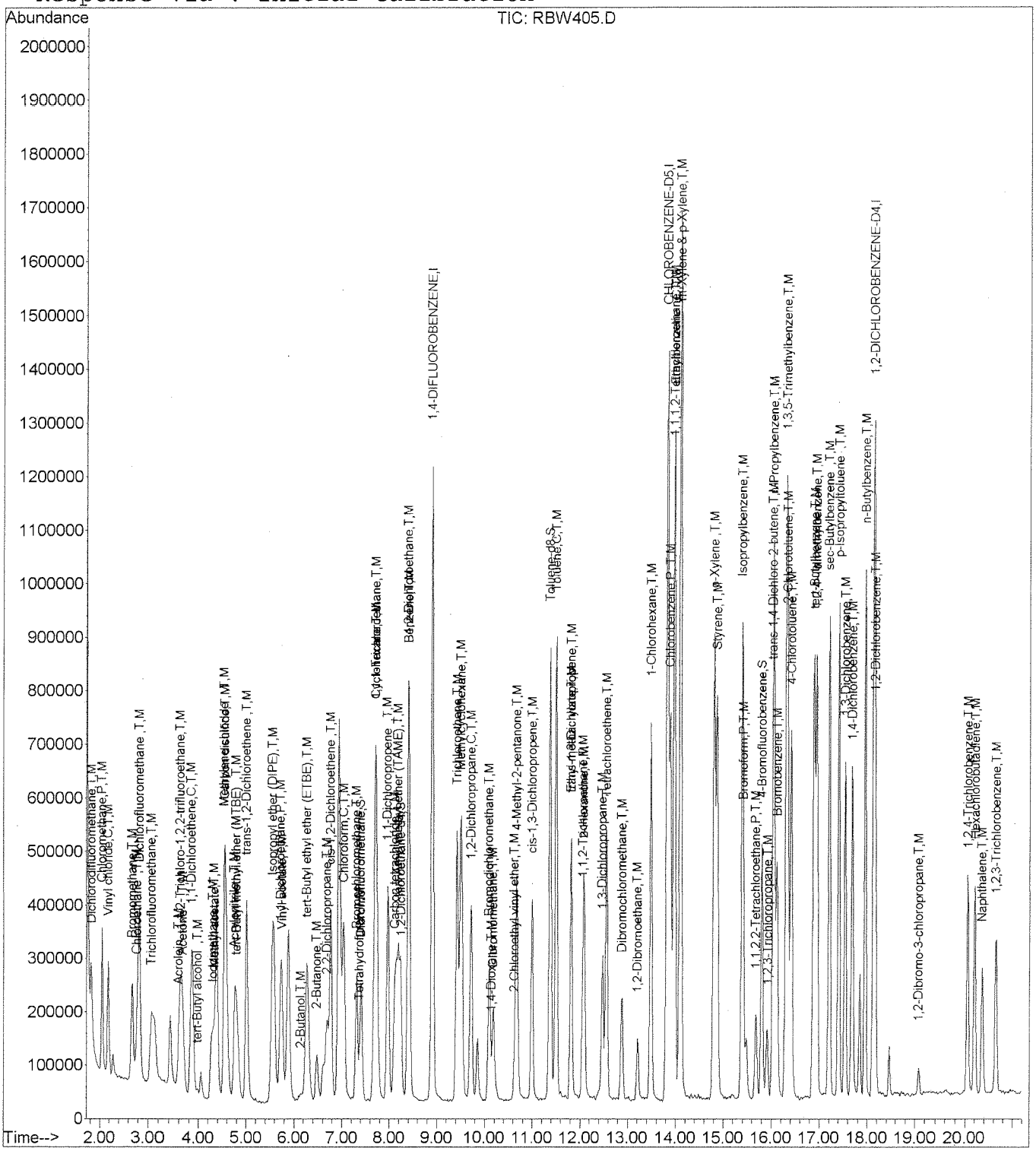
Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW405.D Vial: 6
Acq On : 22 Feb 2016 4:47 pm Operator: ODinh
Sample : VO06B225 Inst : TO06
Misc : 5.0ppb 8260+3-ADD/25ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW406.D Vial: 7
Acq On : 22 Feb 2016 5:12 pm Operator: ODinh
Sample : VO06B226 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1779170	10.00 ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1492555	10.00 ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.13	152	539866	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	7.41	111	510783	10.12 ug/l	0.00
Spiked Amount 10.000			Recovery = 101.20%		
41) 1,2-Dichloroethane-d4	8.24	65	367718	9.96 ug/l	0.00
Spiked Amount 10.000			Recovery = 99.60%		
54) Toluene-d8	11.38	98	2008464	10.28 ug/l	0.00
Spiked Amount 10.000			Recovery = 102.80%		
76) 4-Bromofluorobenzene	15.79	95	625794	9.54 ug/l	0.00
Spiked Amount 10.000			Recovery = 95.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.83	85	704615	10.14 ug/l	100
3) Chloromethane	2.05	50	781965	10.36 ug/l	100
4) Vinyl chloride	2.18	62	718740	10.36 ug/l	100
5) Bromomethane	2.68	94	469932	10.28 ug/l	100
6) Chloroethane	2.78	64	420755	10.25 ug/l	100
7) Dichlorofluoromethane	2.81	67	1138196	10.54 ug/l	100
8) Trichlorofluoromethane	3.08	101	703525	10.08 ug/l	100
9) Acrolein	3.60	56	141787	49.80 ug/l	100
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	370225	10.72 ug/l	100
11) Acetone	3.69	43	239623	54.37 ug/l	100
12) 1,1-Dichloroethene	3.87	61	954950	10.39 ug/l	100
13) tert-Butyl alcohol	3.97	59	91145	50.99 ug/l	100
15) Methyl acetate	4.34	43	188590	10.61 ug/l	100
16) Iodomethane	4.30	142	938067	10.49 ug/l	100
17) Methylene chloride	4.55	49	667677	10.22 ug/l	100
18) Carbon disulfide	4.55	76	2164348	10.04 ug/l	100
19) Acrylonitrile	4.76	53	393206	51.60 ug/l	100
20) tert-Butyl methyl ether (M	4.80	73	846359	10.35 ug/l	100
21) trans-1,2-Dichloroethene	5.01	61	859228	10.31 ug/l	100
22) Isopropyl ether (DIPE)	5.55	45	1843472	10.52 ug/l	100
23) Vinyl acetate	5.75	43	561163	10.81 ug/l	100
24) 1,1-Dichloroethane	5.72	63	1059396	10.43 ug/l	100
25) 2-Butanol	6.14	45	83307	54.05 ug/l	100
26) tert-Butyl ethyl ether (ET	6.28	59	1377389	10.50 ug/l	100
27) 2-Butanone	6.48	72	116095	51.28 ug/l	100
28) 2,2-Dichloropropane	6.69	77	495952	10.46 ug/l	100
29) cis-1,2-Dichloroethene	6.77	96	632017	10.25 ug/l	100

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

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW406.D Vial: 7
Acq On : 22 Feb 2016 5:12 pm Operator: ODinh
Sample : VO06B226 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.03	83	910519	10.08 ug/l	100
32)	Bromochloromethane	7.30	49	437884	11.07 ug/l	100
33)	Tetrahydrofuran	7.38	42	60330	10.34 ug/l	100
35)	1,1,1-Trichloroethane	7.70	97	689539	10.21 ug/l	100
36)	Cyclohexane	7.72	56	1133300	10.06 ug/l	100
38)	1,1-Dichloropropene	7.97	110	314256	10.50 ug/l	100
39)	Carbon tetrachloride	8.12	119	644382	10.38 ug/l	100
40)	tert-Amyl methyl ether (TA	8.19	87	228107	10.07 ug/l	100
42)	1,2-Dichloroethane	8.40	62	464652	10.84 ug/l	100
43)	Benzene	8.40	78	2357746	10.36 ug/l	100
44)	Trichloroethene	9.43	130	662046	10.58 ug/l	100
45)	Methylcyclohexane	9.50	83	1011174	10.09 ug/l	100
46)	1,2-Dichloropropane	9.71	63	589158	10.50 ug/l	100
47)	1,4-Dioxane	10.14	88	45675	205.22 ug/l	100
48)	Bromodichloromethane	10.10	83	652191	10.41 ug/l	100
49)	Dibromomethane	10.17	93	242942	10.65 ug/l	100
50)	2-Chloroethyl vinyl ether	10.63	63	132059	10.64 ug/l	100
51)	4-Methyl-2-pentanone	10.66	43	1256429	54.22 ug/l	100
52)	cis-1,3-Dichloropropene	10.99	75	841368	10.80 ug/l	100
55)	Toluene	11.50	91	2432962	10.37 ug/l	100
56)	Ethyl methacrylate	11.81	69	412395	11.34 ug/l	100
57)	trans-1,3-Dichloropropene	11.81	75	602930	10.81 ug/l	100
58)	1,1,2-Trichloroethane	12.06	97	324624	10.61 ug/l	100
59)	2-Hexanone	12.09	43	765039	56.10 ug/l	100
60)	1,3-Dichloropropane	12.46	76	589732	10.64 ug/l	100
61)	Tetrachloroethene	12.55	164	491032	10.77 ug/l	100
62)	Dibromochloromethane	12.88	129	408485	10.87 ug/l	100
64)	1,2-Dibromoethane	13.21	107	317024	10.79 ug/l	100
65)	1-Chlorohexane	13.49	91	1078319	10.84 ug/l	100
66)	Chlorobenzene	13.89	112	1496684	10.89 ug/l	100
67)	1,1,1,2-Tetrachloroethane	13.96	131	483931	10.85 ug/l	100
68)	Ethylbenzene	13.98	91	2754914	11.09 ug/l	100
69)	m-Xylene & p-Xylene	14.10	91	3913767	21.73 ug/l	100
70)	o-Xylene	14.80	91	2028290	10.89 ug/l	100
71)	Styrene	14.87	104	1563031	10.86 ug/l	100
72)	Isopropylbenzene	15.39	105	2393881	10.95 ug/l	100
74)	Bromoform	15.41	173	204660	10.59 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.68	83	345458	10.28 ug/l	100
77)	1,2,3-Trichloropropane	15.91	110	87079	10.24 ug/l	100
78)	trans-1,4-Dichloro-2-buten	16.03	53	93612	9.68 ug/l	100
79)	n-Propylbenzene	16.05	91	3219087	10.18 ug/l	100

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW406.D Vial: 7
Acq On : 22 Feb 2016 5:12 pm Operator: ODinh
Sample : VO06B226 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80) Bromobenzene	16.12	156	503982	10.18 ug/l	100
81) 1,3,5-Trimethylbenzene	16.30	105	1815655	9.92 ug/l	100
82) 2-Chlorotoluene	16.33	91	1901316	10.02 ug/l	100
83) 4-Chlorotoluene	16.40	91	1565377	10.02 ug/l	100
84) tert-Butylbenzene	16.88	134	500425	10.17 ug/l	100
85) 1,2,4-Trimethylbenzene	16.94	105	1797989	10.21 ug/l	100
86) sec-Butylbenzene	17.21	105	2636183	10.59 ug/l	100
87) p-Isopropyltoluene	17.40	119	2040475	10.22 ug/l	100
88) 1,3-Dichlorobenzene	17.53	146	966243	10.09 ug/l	100
89) 1,4-Dichlorobenzene	17.68	146	955279	10.39 ug/l	100
90) n-Butylbenzene	17.95	91	2003015	10.33 ug/l	100
91) 1,2-Dichlorobenzene	18.16	146	825481	10.47 ug/l	100
92) 1,2-Dibromo-3-chloropropan	19.08	157	49060	10.20 ug/l	100
93) 1,2,4-Trichlorobenzene	20.05	180	503656	10.40 ug/l	100
94) Hexachlorobutadiene	20.20	225	321208	10.55 ug/l	100
95) Naphthalene	20.36	128	730175	10.27 ug/l	100
96) 1,2,3-Trichlorobenzene	20.64	180	393478	10.54 ug/l	100

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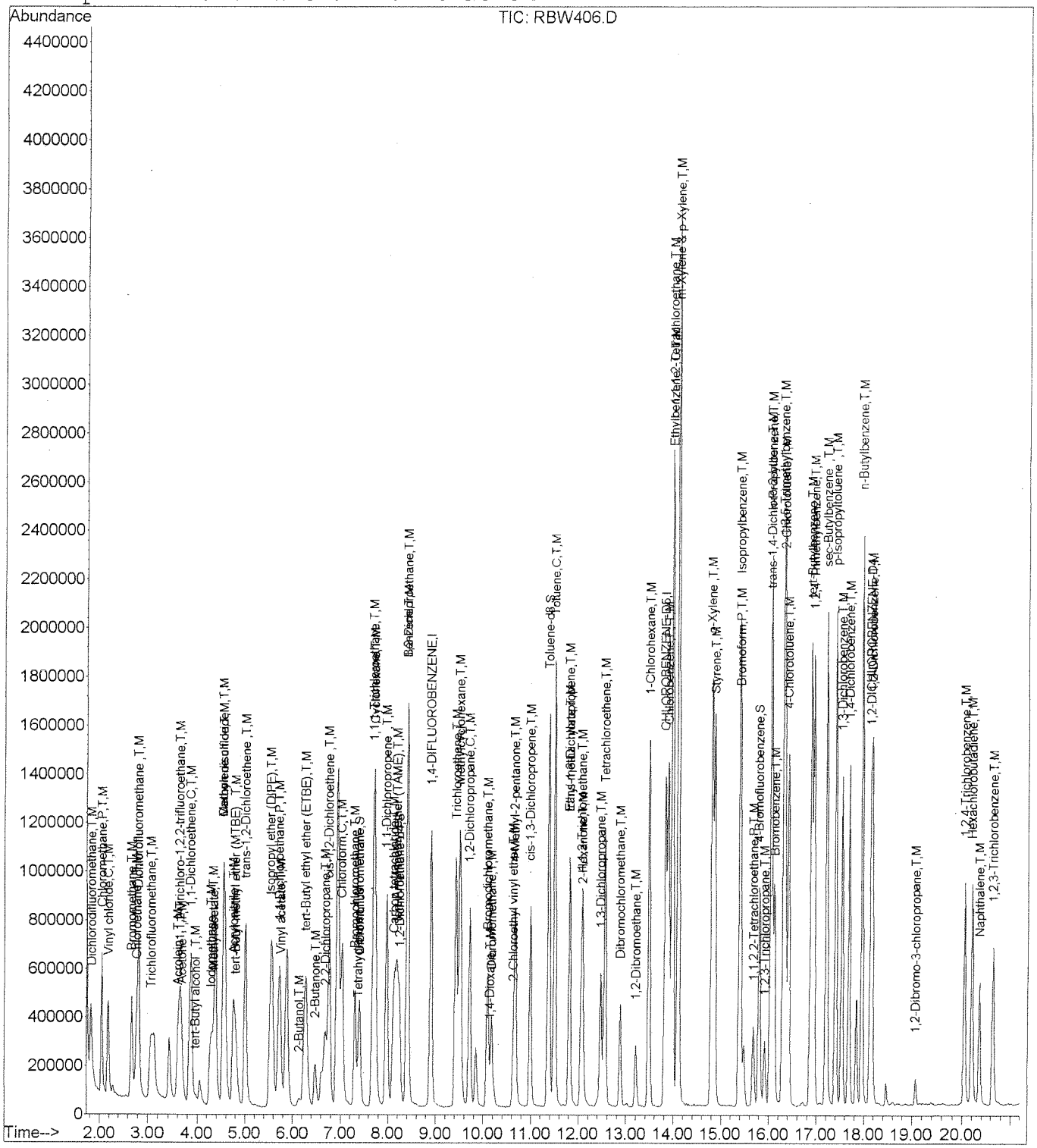
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW406.D Vial: 7
Acq On : 22 Feb 2016 5:12 pm Operator: ODinh
Sample : VO06B226 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:36 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW407.D Vial: 8
Acq On : 22 Feb 2016 5:38 pm Operator: ODinh
Sample : VO06B227 Inst : TO06
Misc : 20ppb 8260+3-ADD/100ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1701452	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1461062	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.13	152	502791	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.41	111	886564	18.36	ug/l	0.00
Spiked Amount 10.000			Recovery	=	183.60%	
41) 1,2-Dichloroethane-d4	8.24	65	613319	17.38	ug/l	0.00
Spiked Amount 10.000			Recovery	=	173.80%	
54) Toluene-d8	11.38	98	3445369	18.01	ug/l	0.00
Spiked Amount 10.000			Recovery	=	180.10%	
76) 4-Bromofluorobenzene	15.80	95	1064483	17.43	ug/l	0.00
Spiked Amount 10.000			Recovery	=	174.30%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.81	85	1278831	19.25	ug/l	98
3) Chloromethane	2.05	50	1396339	19.34	ug/l	99
4) Vinyl chloride	2.19	62	1176579	17.74	ug/l	100
5) Bromomethane	2.68	94	829684	18.97	ug/l	99
6) Chloroethane	2.78	64	713633	18.18	ug/l	100
7) Dichlorofluoromethane	2.81	67	1910801	18.50	ug/l	99
8) Trichlorofluoromethane	3.08	101	1236006	18.51	ug/l	99
9) Acrolein	3.60	56	224722	82.53	ug/l	100
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	630176	19.07	ug/l	99
11) Acetone	3.69	43	360063	87.65	ug/l	97
12) 1,1-Dichloroethene	3.87	61	1625287	18.49	ug/l	100
13) tert-Butyl alcohol	3.97	59	140401	82.14	ug/l	89
15) Methyl acetate	4.34	43	308590	18.91	ug/l	97
16) Iodomethane	4.30	142	1621679	18.96	ug/l	99
17) Methylene chloride	4.55	49	1123935	17.99	ug/l	100
18) Carbon disulfide	4.55	76	3673023	17.82	ug/l	100
19) Acrylonitrile	4.76	53	632887	86.85	ug/l	100
20) tert-Butyl methyl ether (M	4.79	73	1355445	17.33	ug/l	100
21) trans-1,2-Dichloroethene	5.00	61	1487998	18.67	ug/l	100
22) Isopropyl ether (DIPE)	5.56	45	3140599	18.73	ug/l	100
23) Vinyl acetate	5.76	43	939207	18.92	ug/l	98
24) 1,1-Dichloroethane	5.73	63	1777161	18.29	ug/l	99
25) 2-Butanol	6.13	45	128267	87.02	ug/l	94
26) tert-Butyl ethyl ether (ET	6.28	59	2276005	18.15	ug/l	99
27) 2-Butanone	6.48	72	184179	85.06	ug/l	89
28) 2,2-Dichloropropane	6.69	77	826989	18.24	ug/l	99
29) cis-1,2-Dichloroethene	6.77	96	1082043	18.35	ug/l	99

(#) = qualifier out of range (m) = manual integration
RBW407.D VO06B22.M Wed Feb 24 14:07:14 2016 Page 1

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW407.D Vial: 8
Acq On : 22 Feb 2016 5:38 pm Operator: ODinh
Sample : VO06B227 Inst : TO06
Misc : 20ppb 8260+3-ADD/100ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.04	83	1550765	17.95 ug/l	100
32)	Bromochloromethane	7.30	49	711868	18.82 ug/l	98
33)	Tetrahydrofuran	7.38	42	100659	18.04 ug/l	96
35)	1,1,1-Trichloroethane	7.70	97	1181369	18.29 ug/l	100
36)	Cyclohexane	7.72	56	2005788	18.62 ug/l	99
38)	1,1-Dichloropropene	7.97	110	532174	18.59 ug/l	98
39)	Carbon tetrachloride	8.12	119	1112150	18.74 ug/l	100
40)	tert-Amyl methyl ether (TA	8.20	87	362502	16.73 ug/l	99
42)	1,2-Dichloroethane	8.40	62	757282	18.48 ug/l	98
43)	Benzene	8.40	78	3994450	18.36 ug/l	99
44)	Trichloroethene	9.42	130	1163238	19.44 ug/l	99
45)	Methylcyclohexane	9.50	83	1753647	18.29 ug/l	99
46)	1,2-Dichloropropane	9.71	63	989161	18.43 ug/l	99
47)	1,4-Dioxane	10.14	88	74507	350.05 ug/l	89
48)	Bromodichloromethane	10.10	83	1087621	18.15 ug/l	100
49)	Dibromomethane	10.17	93	399594	18.32 ug/l	99
50)	2-Chloroethyl vinyl ether	10.63	63	214681	18.09 ug/l	98
51)	4-Methyl-2-pentanone	10.66	43	2084743	94.08 ug/l	100
52)	cis-1,3-Dichloropropene	10.99	75	1395537	18.74 ug/l	100
55)	Toluene	11.50	91	4096821	17.84 ug/l	100
56)	Ethyl methacrylate	11.81	69	661490	18.58 ug/l	99
57)	trans-1,3-Dichloropropene	11.81	75	1003590	18.37 ug/l	99
58)	1,1,2-Trichloroethane	12.06	97	528675	17.65 ug/l	99
59)	2-Hexanone	12.09	43	1236174	92.60 ug/l	100
60)	1,3-Dichloropropane	12.46	76	995737	18.35 ug/l	98
61)	Tetrachloroethene	12.55	164	830272	18.61 ug/l	100
62)	Dibromochloromethane	12.88	129	682038	18.53 ug/l	99
64)	1,2-Dibromoethane	13.21	107	526808	18.31 ug/l	99
65)	1-Chlorohexane	13.49	91	1858884	19.09 ug/l	100
66)	Chlorobenzene	13.89	112	2531413	18.81 ug/l	100
67)	1,1,1,2-Tetrachloroethane	13.97	131	801455	18.36 ug/l	98
68)	Ethylbenzene	13.98	91	4561495	18.76 ug/l	100
69)	m-Xylene & p-Xylene	14.10	91	6567652	37.24 ug/l	99
70)	o-Xylene	14.80	91	3368316	18.47 ug/l	100
71)	Styrene	14.86	104	2615123	18.56 ug/l	99
72)	Isopropylbenzene	15.39	105	4092896	19.13 ug/l	100
74)	Bromoform	15.41	173	333694	18.54 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.68	83	560274	17.90 ug/l	99
77)	1,2,3-Trichloropropane	15.91	110	138558	17.50 ug/l	97
78)	trans-1,4-Dichloro-2-buten	16.03	53	153069	17.00 ug/l	100
79)	n-Propylbenzene	16.05	91	5384112	18.28 ug/l	99

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

SW 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW407.D Vial: 8
Acq On : 22 Feb 2016 5:38 pm Operator: ODinh
Sample : VO06B227 Inst : TO06
Misc : 20ppb 8260+3-ADD/100ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.11	156	835355	18.12 ug/l	99
81)	1,3,5-Trimethylbenzene	16.30	105	3089017	18.12 ug/l	100
82)	2-Chlorotoluene	16.33	91	3280870	18.57 ug/l	100
83)	4-Chlorotoluene	16.41	91	2581857	17.75 ug/l	99
84)	tert-Butylbenzene	16.88	134	858356	18.74 ug/l	99
85)	1,2,4-Trimethylbenzene	16.94	105	2984250	18.20 ug/l	99
86)	sec-Butylbenzene	17.21	105	4344596	18.75 ug/l	100
87)	p-Isopropyltoluene	17.40	119	3512315	18.89 ug/l	100
88)	1,3-Dichlorobenzene	17.54	146	1683771	18.88 ug/l	99
89)	1,4-Dichlorobenzene	17.68	146	1588805	18.56 ug/l	100
90)	n-Butylbenzene	17.95	91	3406777	18.86 ug/l	100
91)	1,2-Dichlorobenzene	18.16	146	1372610	18.70 ug/l	99
92)	1,2-Dibromo-3-chloropropan	19.08	157	81761	18.25 ug/l	96
93)	1,2,4-Trichlorobenzene	20.05	180	852660	18.91 ug/l	100
94)	Hexachlorobutadiene	20.20	225	557775	19.67 ug/l	100
95)	Naphthalene	20.36	128	1223415	18.48 ug/l	99
96)	1,2,3-Trichlorobenzene	20.64	180	644026	18.53 ug/l	99

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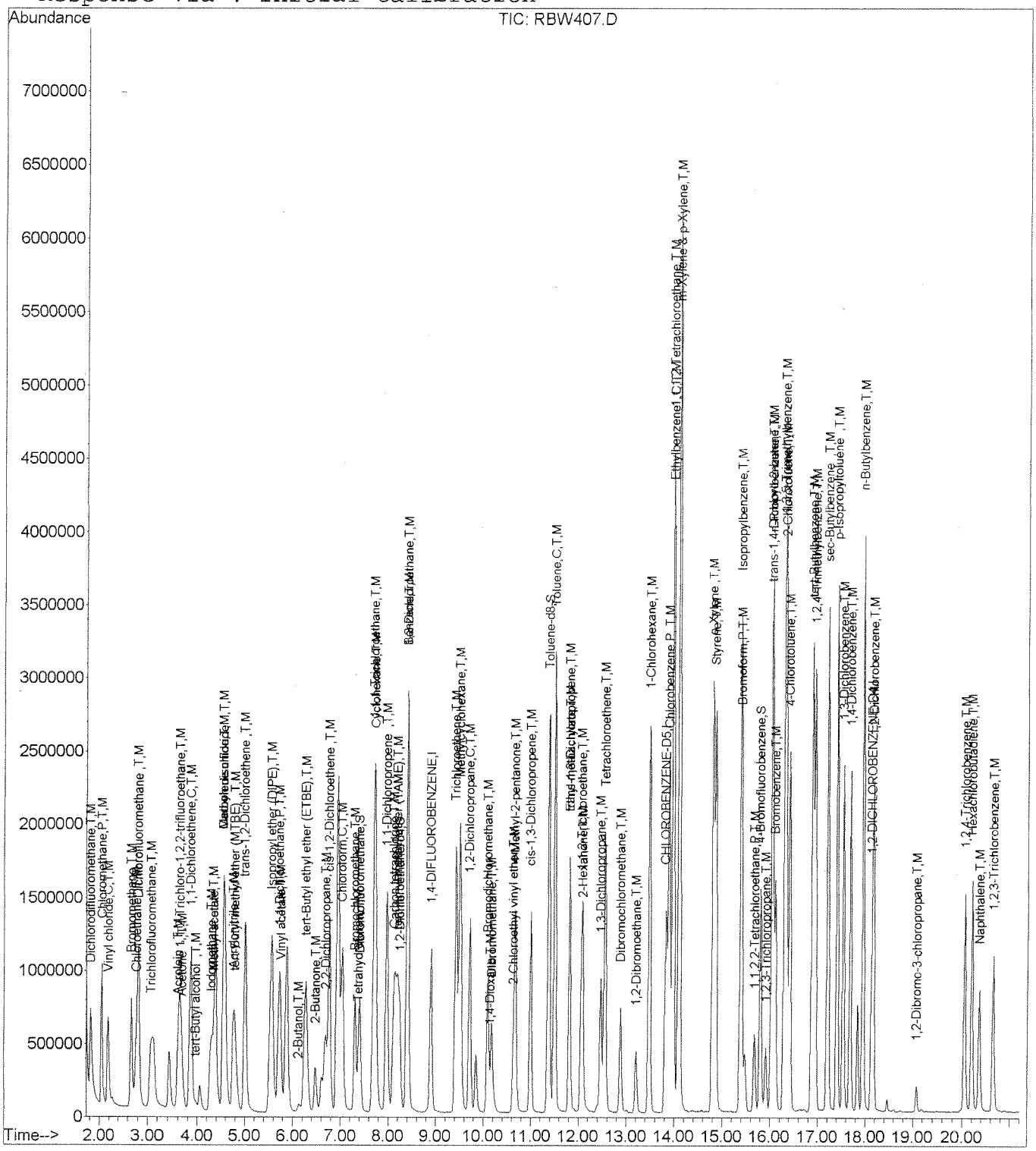
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW407.D Vial: 8
Acq On : 22 Feb 2016 5:38 pm Operator: ODinh
Sample : VO06B227 Inst : TO06
Misc : 20ppb 8260+3-ADD/100ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW408.D Vial: 9
Acq On : 22 Feb 2016 6:03 pm Operator: ODinh
Sample : VO06B228 Inst : TO06
Misc : 30ppb 8260+3-ADD/150ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1372118	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1179413	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.13	152	402509	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.41	111	1290332	33.14	ug/l	0.00
Spiked Amount 10.000			Recovery	=	331.40%	
41) 1,2-Dichloroethane-d4	8.24	65	913294	32.09	ug/l	0.00
Spiked Amount 10.000			Recovery	=	320.90%	
54) Toluene-d8	11.38	98	4905554	31.77	ug/l	0.00
Spiked Amount 10.000			Recovery	=	317.70%	
76) 4-Bromofluorobenzene	15.79	95	1550967	31.72	ug/l	0.00
Spiked Amount 10.000			Recovery	=	317.20%	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.81	85	1815116	33.88	ug/l	98
3) Chloromethane	2.05	50	1956676	33.61	ug/l	99
4) Vinyl chloride	2.19	62	1636481	30.60	ug/l	100
5) Bromomethane	2.68	94	1194585	33.87	ug/l	99
6) Chloroethane	2.78	64	1053310	33.28	ug/l	100
7) Dichlorofluoromethane	2.82	67	2847614	34.19	ug/l	100
8) Trichlorofluoromethane	3.08	101	1779394	33.04	ug/l	100
9) Acrolein	3.60	56	347844	158.41	ug/l	98
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	894861	33.59	ug/l	99
11) Acetone	3.69	43	553170	170.50	ug/l	97
12) 1,1-Dichloroethene	3.87	61	2376548	33.52	ug/l	99
13) tert-Butyl alcohol	3.97	59	222065	161.09	ug/l	97
15) Methyl acetate	4.34	43	438507	34.12	ug/l	96
16) Iodomethane	4.28	142	2334543	33.85	ug/l	99
17) Methylene chloride	4.55	49	1616076	32.08	ug/l	99
18) Carbon disulfide	4.55	76	5311899	31.96	ug/l	99
19) Acrylonitrile	4.76	53	987779	168.08	ug/l	99
20) tert-Butyl methyl ether (M	4.79	73	2062311	32.69	ug/l	99
21) trans-1,2-Dichloroethene	5.01	61	2170911	33.78	ug/l	100
22) Isopropyl ether (DIPE)	5.56	45	4501202	33.30	ug/l	100
23) Vinyl acetate	5.75	43	1434555	35.83	ug/l	99
24) 1,1-Dichloroethane	5.73	63	2593962	33.10	ug/l	100
25) 2-Butanol	6.14	45	205365	172.77	ug/l	99
26) tert-Butyl ethyl ether (ET	6.28	59	3236664	32.01	ug/l	99
27) 2-Butanone	6.47	72	275493	157.77	ug/l	88
28) 2,2-Dichloropropane	6.69	77	1190038	32.54	ug/l	100
29) cis-1,2-Dichloroethene	6.77	96	1555989	32.72	ug/l	100

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

SW 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW408.D Vial: 9
Acq On : 22 Feb 2016 6:03 pm Operator: ODinh
Sample : VO06B228 Inst : TO06
Misc : 30ppb 8260+3-ADD/150ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.03	83	2232735	32.05 ug/l	100
32)	Bromochloromethane	7.30	49	1038801	34.06 ug/l	97
33)	Tetrahydrofuran	7.36	42	144946	32.22 ug/l	98
35)	1,1,1-Trichloroethane	7.70	97	1716508	32.95 ug/l	99
36)	Cyclohexane	7.72	56	2814954	32.40 ug/l	99
38)	1,1-Dichloropropene	7.97	110	777466	33.67 ug/l	100
39)	Carbon tetrachloride	8.12	119	1602373	33.48 ug/l	100
40)	tert-Amyl methyl ether (TA	8.19	87	543746	31.12 ug/l	100
42)	1,2-Dichloroethane	8.40	62	1103405	33.38 ug/l	97
43)	Benzene	8.40	78	5632990	32.11 ug/l	99
44)	Trichloroethene	9.43	130	1648489	34.15 ug/l	99
45)	Methylcyclohexane	9.52	83	2414856	31.23 ug/l	99
46)	1,2-Dichloropropane	9.71	63	1441466	33.31 ug/l	99
47)	1,4-Dioxane	10.14	88	114565	667.45 ug/l	96
48)	Bromodichloromethane	10.10	83	1570246	32.49 ug/l	100
49)	Dibromomethane	10.17	93	596404	33.90 ug/l	99
50)	2-Chloroethyl vinyl ether	10.63	63	329213	34.40 ug/l	98
51)	4-Methyl-2-pentanone	10.66	43	3109862	174.02 ug/l	99
52)	cis-1,3-Dichloropropene	10.99	75	2051916	34.16 ug/l	100
55)	Toluene	11.50	91	5892868	31.79 ug/l	100
56)	Ethyl methacrylate	11.81	69	996722	34.68 ug/l	100
57)	trans-1,3-Dichloropropene	11.81	75	1478898	33.54 ug/l	100
58)	1,1,2-Trichloroethane	12.06	97	785351	32.49 ug/l	99
59)	2-Hexanone	12.09	43	1895609	175.90 ug/l	99
60)	1,3-Dichloropropane	12.46	76	1493884	34.10 ug/l	98
61)	Tetrachloroethene	12.55	164	1207580	33.52 ug/l	99
62)	Dibromochloromethane	12.88	129	1020470	34.35 ug/l	100
64)	1,2-Dibromoethane	13.21	107	794274	34.20 ug/l	99
65)	1-Chlorohexane	13.49	91	2608730	33.19 ug/l	99
66)	Chlorobenzene	13.89	112	3653773	33.64 ug/l	100
67)	1,1,1,2-Tetrachloroethane	13.97	131	1176488	33.39 ug/l	99
68)	Ethylbenzene	13.98	91	6650196	33.89 ug/l	99
69)	m-Xylene & p-Xylene	14.10	91	9268166	65.11 ug/l	98
70)	o-Xylene	14.81	91	4966313	33.74 ug/l	99
71)	Styrene	14.87	104	3795352	33.37 ug/l	99
72)	Isopropylbenzene	15.39	105	5737772	33.22 ug/l	100
74)	Bromoform	15.41	173	503375	34.93 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.68	83	844297	33.69 ug/l	98
77)	1,2,3-Trichloropropane	15.91	110	208095	32.83 ug/l	97
78)	trans-1,4-Dichloro-2-buten	16.03	53	228986	31.76 ug/l	100
79)	n-Propylbenzene	16.05	91	7618821	32.31 ug/l	99

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

SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW408.D Vial: 9
Acq On : 22 Feb 2016 6:03 pm Operator: ODinh
Sample : VO06B228 Inst : TO06
Misc : 30ppb 8260+3-ADD/150ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.12	156	1232827	33.40 ug/l	100
81)	1,3,5-Trimethylbenzene	16.30	105	4427195	32.44 ug/l	100
82)	2-Chlorotoluene	16.33	91	4628130	32.73 ug/l	100
83)	4-Chlorotoluene	16.40	91	3834820	32.94 ug/l	99
84)	tert-Butylbenzene	16.88	134	1194041	32.56 ug/l	98
85)	1,2,4-Trimethylbenzene	16.94	105	4295511	32.72 ug/l	99
86)	sec-Butylbenzene	17.21	105	6137125	33.08 ug/l	100
87)	p-Isopropyltoluene	17.40	119	4909441	32.98 ug/l	99
88)	1,3-Dichlorobenzene	17.53	146	2381391	33.35 ug/l	99
89)	1,4-Dichlorobenzene	17.68	146	2305957	33.65 ug/l	99
90)	n-Butylbenzene	17.95	91	4822234	33.35 ug/l	100
91)	1,2-Dichlorobenzene	18.17	146	2007358	34.16 ug/l	98
92)	1,2-Dibromo-3-chloropropan	19.08	157	124114	34.60 ug/l	98
93)	1,2,4-Trichlorobenzene	20.05	180	1269404	35.16 ug/l	99
94)	Hexachlorobutadiene	20.20	225	780692	34.39 ug/l	100
95)	Naphthalene	20.36	128	1866986	35.23 ug/l	100
96)	1,2,3-Trichlorobenzene	20.64	180	969405	34.84 ug/l	99

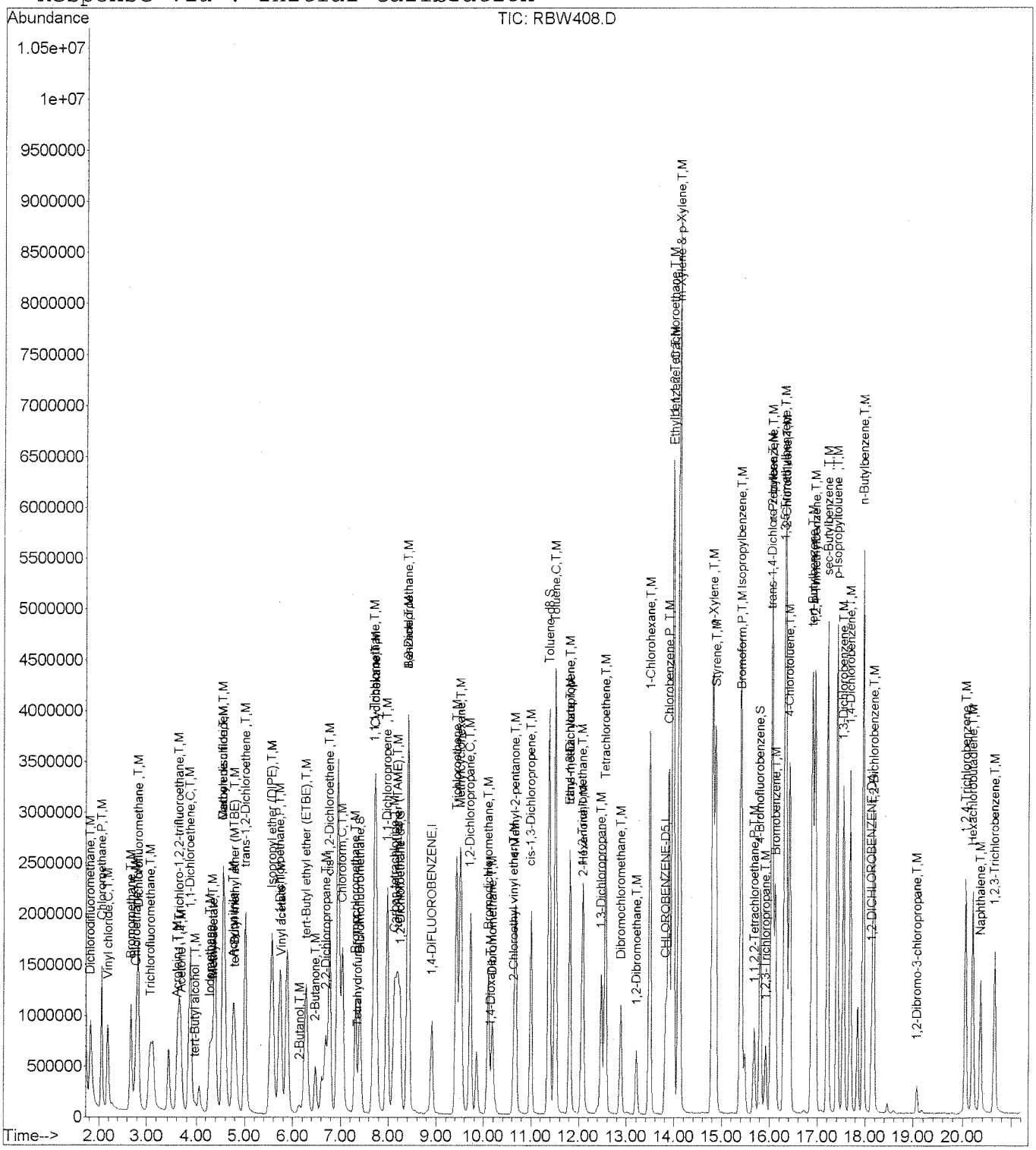
Su 2/25/16

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW408.D Vial: 9
Acq On : 22 Feb 2016 6:03 pm Operator: ODinh
Sample : VO06B228 Inst : TO06
Misc : 30ppb 8260+3-ADD/150ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:37 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW409.D Vial: 10
Acq On : 22 Feb 2016 6:28 pm Operator: ODinh
Sample : VO06B229 Inst : TO06
Misc : 50ppb 8260+3-ADD/250ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 14:24 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.90	114	1577313	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.83	117	1354103	10.00	ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.14	152	456762	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	7.40	111	2105069	47.03	ug/l	0.00
Spiked Amount 10.000			Recovery = 470.30%			
41) 1,2-Dichloroethane-d4	8.25	65	1479623	45.23	ug/l	0.00
Spiked Amount 10.000			Recovery = 452.30%			
54) Toluene-d8	11.37	98	8050868	45.41	ug/l	0.00
Spiked Amount 10.000			Recovery = 454.10%			
76) 4-Bromofluorobenzene	15.80	95	2577364	46.46	ug/l	0.00
Spiked Amount 10.000			Recovery = 464.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.82	85	3196253	51.90	ug/l	99
3) Chloromethane	2.05	50	3319526	49.60	ug/l	100
4) Vinyl chloride	2.18	62	2640637	42.95	ug/l	99
5) Bromomethane	2.69	94	1999660	49.32	ug/l	99
6) Chloroethane	2.77	64	1740919	47.85	ug/l	99
7) Dichlorofluoromethane	2.82	67	4645468	48.53	ug/l	100
8) Trichlorofluoromethane	3.07	101	3110372	50.24	ug/l	99
9) Acrolein	3.59	56	561114	222.29	ug/l	99
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	1592944	52.01	ug/l	99
11) Acetone	3.68	43	866387	233.71	ug/l	96
12) 1,1-Dichloroethene	3.86	61	4096794	50.27	ug/l	100
13) tert-Butyl alcohol	3.98	59	350138	220.96	ug/l	91
15) Methyl acetate	4.34	43	705695	48.19	ug/l	95
16) Iodomethane	4.31	142	3923896	49.50	ug/l	100
17) Methylene chloride	4.54	49	2712574	46.84	ug/l	99
18) Carbon disulfide	4.56	76	8989484	47.05	ug/l	99
19) Acrylonitrile	4.75	53	1599537	236.77	ug/l	99
20) tert-Butyl methyl ether (M	4.80	73	3355168	46.27	ug/l	99
21) trans-1,2-Dichloroethene	5.01	61	3631011	49.15	ug/l	99
22) Isopropyl ether (DIPE)	5.56	45	7562409	48.66	ug/l	99
23) Vinyl acetate	5.75	43	2357090	51.21	ug/l	99
24) 1,1-Dichloroethane	5.72	63	4376941	48.59	ug/l	99
25) 2-Butanol	6.14	45	338605	247.81	ug/l	99
26) tert-Butyl ethyl ether (ET	6.27	59	5512859	47.42	ug/l	100
27) 2-Butanone	6.48	72	455910	227.13	ug/l	91
28) 2,2-Dichloropropane	6.69	77	1870435	44.49	ug/l	99
29) cis-1,2-Dichloroethene	6.78	96	2588472	47.36	ug/l	99

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

SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW409.D Vial: 10
Acq On : 22 Feb 2016 6:28 pm Operator: ODinh
Sample : VO06B229 Inst : TO06
Misc : 50ppb 8260+3-ADD/250ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 14:24 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.04	83	3809559	47.57 ug/l	100
32)	Bromochloromethane	7.31	49	1727007	49.26 ug/l	97
33)	Tetrahydrofuran	7.37	42	235669	45.57 ug/l	95
35)	1,1,1-Trichloroethane	7.70	97	2819034	47.08 ug/l	99
36)	Cyclohexane	7.73	56	4806129	48.12 ug/l	100
38)	1,1-Dichloropropene	7.97	110	1340893	50.51 ug/l	100
39)	Carbon tetrachloride	8.13	119	2749989	49.99 ug/l	100
40)	tert-Amyl methyl ether (TA	8.19	87	883050	43.96 ug/l	99
42)	1,2-Dichloroethane	8.40	62	1834633	48.29 ug/l	98
43)	Benzene	8.41	78	9512760	47.17 ug/l	99
44)	Trichloroethene	9.42	130	2803825	50.53 ug/l	99
45)	Methylcyclohexane	9.51	83	4278555	48.14 ug/l	99
46)	1,2-Dichloropropane	9.72	63	2383573	47.92 ug/l	99
47)	1,4-Dioxane	10.14	88	184120	933.13 ug/l	99
48)	Bromodichloromethane	10.09	83	2655234	47.80 ug/l	100
49)	Dibromomethane	10.18	93	961671	47.55 ug/l	100
50)	2-Chloroethyl vinyl ether	10.63	63	546120	49.65 ug/l	97
51)	4-Methyl-2-pentanone	10.67	43	4985371	242.68 ug/l	99
52)	cis-1,3-Dichloropropene	10.98	75	3379255	48.95 ug/l	100
55)	Toluene	11.51	91	9658180	45.38 ug/l	98
56)	Ethyl methacrylate	11.82	69	1600018	48.49 ug/l	99
57)	trans-1,3-Dichloropropene	11.82	75	2396026	47.33 ug/l	99
58)	1,1,2-Trichloroethane	12.06	97	1283064	46.23 ug/l	100
59)	2-Hexanone	12.09	43	3071154	248.22 ug/l	99
60)	1,3-Dichloropropane	12.47	76	2377652	47.27 ug/l	99
61)	Tetrachloroethene	12.56	164	2077064	50.22 ug/l	99
62)	Dibromochloromethane	12.89	129	1666229	48.85 ug/l	99
64)	1,2-Dibromoethane	13.20	107	1298829	48.71 ug/l	99
65)	1-Chlorohexane	13.48	91	4428571	49.07 ug/l	99
66)	Chlorobenzene	13.89	112	6065223	48.64 ug/l	98
67)	1,1,1,2-Tetrachloroethane	13.96	131	1960745	48.46 ug/l	99
68)	Ethylbenzene	13.97	91	10780791	47.85 ug/l	98
69)	m-Xylene & p-Xylene	14.11	91	15553475	95.17 ug/l	96
70)	o-Xylene	14.81	91	8080623	47.82 ug/l	98
71)	Styrene	14.87	104	6440919	49.32 ug/l	100
72)	Isopropylbenzene	15.39	105	9705439	48.94 ug/l	99
74)	Bromoform	15.42	173	828698	50.68 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.69	83	1337894	47.05 ug/l	98
77)	1,2,3-Trichloropropane	15.92	110	348170	48.40 ug/l	97
78)	trans-1,4-Dichloro-2-buten	16.03	53	381369	46.61 ug/l	97
79)	n-Propylbenzene	16.04	91	13100943	48.96 ug/l	98

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

SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW409.D Vial: 10
Acq On : 22 Feb 2016 6:28 pm Operator: ODinh
Sample : VO06B229 Inst : TO06
Misc : 50ppb 8260+3-ADD/250ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 14:24 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.12	156	2093137	49.98 ug/l	99
81)	1,3,5-Trimethylbenzene	16.31	105	7665952	49.50 ug/l	99
82)	2-Chlorotoluene	16.34	91	7744735	48.26 ug/l	99
83)	4-Chlorotoluene	16.41	91	6683660	50.58 ug/l	98
84)	tert-Butylbenzene	16.89	134	2131784	51.22 ug/l	97
85)	1,2,4-Trimethylbenzene	16.95	105	7379647	49.54 ug/l	97
86)	sec-Butylbenzene	17.20	105	10669956	50.68 ug/l	98
87)	p-Isopropyltoluene	17.41	119	8785093	52.00 ug/l	98
88)	1,3-Dichlorobenzene	17.54	146	4039976	49.86 ug/l	99
89)	1,4-Dichlorobenzene	17.69	146	3918611	50.39 ug/l	99
90)	n-Butylbenzene	17.96	91	8300431	50.58 ug/l	98
91)	1,2-Dichlorobenzene	18.17	146	3384369	50.75 ug/l	98
92)	1,2-Dibromo-3-chloropropan	19.08	157	208421	51.20 ug/l	98
93)	1,2,4-Trichlorobenzene	20.04	180	2212154	54.00 ug/l	99
94)	Hexachlorobutadiene	20.21	225	1393081	54.07 ug/l	100
95)	Naphthalene	20.36	128	3088777	51.36 ug/l	100
96)	1,2,3-Trichlorobenzene	20.65	180	1652218	52.33 ug/l	99

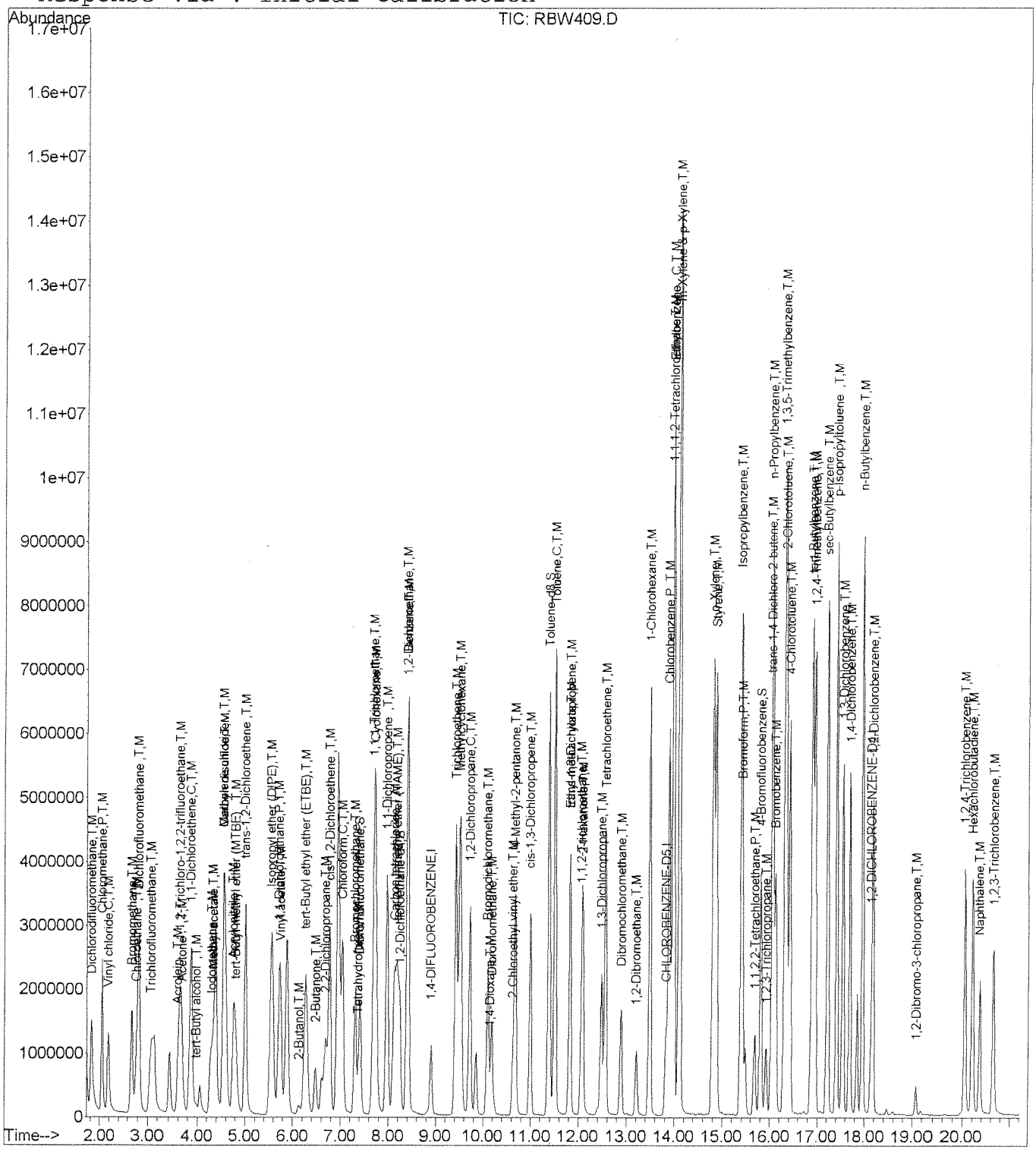
Su 2/25/16

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW409.D Vial: 10
Acq On : 22 Feb 2016 6:28 pm Operator: ODinh
Sample : VO06B229 Inst : TO06
Misc : 50ppb 8260+3-ADD/250ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 14:24 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW410.D Vial: 11
Acq On : 22 Feb 2016 6:54 pm Operator: ODinh
Sample : VO06B2210 Inst : TO06
Misc : 100ppb 8260+3-ADD/500ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:39 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1485222	10.00 ug/l	0.00
53) CHLOROBENZENE-D5	13.83	117	1237807	10.00 ug/l	0.01
73) 1,2-DICHLOROBENZENE-D4	18.13	152	419520	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	7.40	111	4228299	100.31 ug/l	0.00
Spiked Amount 10.000			Recovery	= 1003.10%	
41) 1,2-Dichloroethane-d4	8.25	65	2967506	96.33 ug/l	0.01
Spiked Amount 10.000			Recovery	= 963.30%	
54) Toluene-d8	11.37	98	15594739	96.22 ug/l	0.00
Spiked Amount 10.000			Recovery	= 962.20%	
76) 4-Bromofluorobenzene	15.81	95	4866272	95.50 ug/l	0.01
Spiked Amount 10.000			Recovery	= 955.00%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.81	85	6306694	108.75 ug/l	99
3) Chloromethane	2.05	50	6404007	101.62 ug/l	98
4) Vinyl chloride	2.18	62	4534094	78.32 ug/l	99
5) Bromomethane	2.67	94	4037564	105.76 ug/l	99
6) Chloroethane	2.78	64	3506337	102.35 ug/l	99
7) Dichlorofluoromethane	2.82	67	9258732	102.71 ug/l	99
8) Trichlorofluoromethane	3.09	101	6258212	107.36 ug/l	99
9) Acrolein	3.60	56	1108283	466.28 ug/l	98
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	3263527	113.16 ug/l	99
11) Acetone	3.68	43	1738993	502.60 ug/l	96
12) 1,1-Dichloroethene	3.86	61	8077834	105.26 ug/l	100
13) tert-Butyl alcohol	3.98	59	694669	465.56 ug/l	92
15) Methyl acetate	4.34	43	1344248	98.57 ug/l	95
16) Iodomethane	4.31	142	7794633	104.42 ug/l	100
17) Methylene chloride	4.55	49	5411657	99.24 ug/l	98
18) Carbon disulfide	4.56	76	18046124	100.30 ug/l	98
19) Acrylonitrile	4.76	53	3201684	503.31 ug/l	100
20) tert-Butyl methyl ether (M	4.80	73	6605897	96.74 ug/l	100
21) trans-1,2-Dichloroethene	5.01	61	7180088	103.21 ug/l	99
22) Isopropyl ether (DIPE)	5.56	45	14627749	99.96 ug/l	98
23) Vinyl acetate	5.75	43	4617238	106.53 ug/l	100
24) 1,1-Dichloroethane	5.72	63	8675231	102.28 ug/l	98
25) 2-Butanol	6.14	45	688753	535.32 ug/l	98
26) tert-Butyl ethyl ether (ET	6.27	59	10772004	98.41 ug/l	100
27) 2-Butanone	6.48	72	897092	474.63 ug/l	88
28) 2,2-Dichloropropane	6.69	77	3363695	84.98 ug/l	99
29) cis-1,2-Dichloroethene	6.78	96	5120614	99.49 ug/l	98

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

SA 2/25/16

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW410.D Vial: 11
Acq On : 22 Feb 2016 6:54 pm Operator: ODinh
Sample : VO06B2210 Inst : TO06
Misc : 100ppb 8260+3-ADD/500ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:39 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.05	83	7491514	99.36 ug/l	99
32)	Bromochloromethane	7.31	49	3398374	102.94 ug/l	97
33)	Tetrahydrofuran	7.37	42	451771	92.78 ug/l	97
35)	1,1,1-Trichloroethane	7.70	97	5554289	98.51 ug/l	100
36)	Cyclohexane	7.73	56	9517599	101.20 ug/l	99
38)	1,1-Dichloropropene	7.97	110	2666335	106.67 ug/l	98
39)	Carbon tetrachloride	8.13	119	5523535	106.63 ug/l	100
40)	tert-Amyl methyl ether (TA	8.19	87	1747315	92.38 ug/l	99
42)	1,2-Dichloroethane	8.40	62	3593943	100.45 ug/l	97
43)	Benzene	8.41	78	18060522	95.10 ug/l	97
44)	Trichloroethene	9.43	130	5467142	104.65 ug/l	99
45)	Methylcyclohexane	9.52	83	8517724	101.77 ug/l	99
46)	1,2-Dichloropropane	9.72	63	4731175	101.01 ug/l	99
47)	1,4-Dioxane	10.14	88	367335	1977.10 ug/l	99
48)	Bromodichloromethane	10.10	83	5276044	100.86 ug/l	100
49)	Dibromomethane	10.17	93	1906520	100.12 ug/l	99
50)	2-Chloroethyl vinyl ether	10.63	63	1099492	106.15 ug/l	98
51)	4-Methyl-2-pentanone	10.68	43	9356438	483.69 ug/l	98
52)	cis-1,3-Dichloropropene	11.00	75	6676689	102.70 ug/l	99
55)	Toluene	11.51	91	18831137	96.79 ug/l	96
56)	Ethyl methacrylate	11.82	69	3108708	103.07 ug/l	100
57)	trans-1,3-Dichloropropene	11.82	75	4724931	102.11 ug/l	99
58)	1,1,2-Trichloroethane	12.06	97	2547900	100.43 ug/l	99
59)	2-Hexanone	12.09	43	5744690	507.92 ug/l	99
60)	1,3-Dichloropropane	12.48	76	4726553	102.80 ug/l	99
61)	Tetrachloroethene	12.56	164	4219862	111.62 ug/l	99
62)	Dibromochloromethane	12.88	129	3308655	106.12 ug/l	99
64)	1,2-Dibromoethane	13.20	107	2550283	104.62 ug/l	99
65)	1-Chlorohexane	13.49	91	8648023	104.83 ug/l	99
66)	Chlorobenzene	13.89	112	11773969	103.28 ug/l	97
67)	1,1,1,2-Tetrachloroethane	13.96	131	3893108	105.27 ug/l	98
68)	Ethylbenzene	13.98	91	19818455	96.23 ug/l	94
69)	m-Xylene & p-Xylene	14.11	91	25489369	170.62 ug/l	81
70)	o-Xylene	14.81	91	15382525	99.59 ug/l	97
71)	Styrene	14.87	104	12344141	103.41 ug/l	98
72)	Isopropylbenzene	15.39	105	17758810	97.95 ug/l	96
74)	Bromoform	15.42	173	1627663	108.37 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.67	83	2589529	99.15 ug/l	98
77)	1,2,3-Trichloropropane	15.93	110	661878	100.18 ug/l	95
78)	trans-1,4-Dichloro-2-buten	16.03	53	722555	96.16 ug/l	96
79)	n-Propylbenzene	16.04	91	22402731	91.16 ug/l	91

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

Su 2/25/16

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW410.D Vial: 11
Acq On : 22 Feb 2016 6:54 pm Operator: ODinh
Sample : VO06B2210 Inst : TO06
Misc : 100ppb 8260+3-ADD/500ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:39 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.12	156	4108692	106.81 ug/l	86
81)	1,3,5-Trimethylbenzene	16.31	105	14041073	98.71 ug/l	97
82)	2-Chlorotoluene	16.34	91	14167218	96.12 ug/l	96
83)	4-Chlorotoluene	16.42	91	12733133	104.92 ug/l	96
84)	tert-Butylbenzene	16.89	134	4075661	106.62 ug/l	93
85)	1,2,4-Trimethylbenzene	16.95	105	13689277	100.05 ug/l	95
86)	sec-Butylbenzene	17.20	105	18799053	97.22 ug/l	94
87)	p-Isopropyltoluene	17.41	119	15686446	101.10 ug/l	96
88)	1,3-Dichlorobenzene	17.55	146	7718987	103.73 ug/l	98
89)	1,4-Dichlorobenzene	17.70	146	7360225	103.06 ug/l	98
90)	n-Butylbenzene	17.95	91	15636457	103.74 ug/l	96
91)	1,2-Dichlorobenzene	18.17	146	6300243	102.86 ug/l	98
92)	1,2-Dibromo-3-chloropropan	19.08	157	391069	104.59 ug/l	97
93)	1,2,4-Trichlorobenzene	20.05	180	4115141	109.37 ug/l	99
94)	Hexachlorobutadiene	20.21	225	2686814	113.54 ug/l	100
95)	Naphthalene	20.36	128	5750419	104.10 ug/l	100
96)	1,2,3-Trichlorobenzene	20.64	180	3097144	106.81 ug/l	99

Su

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

2/25/16

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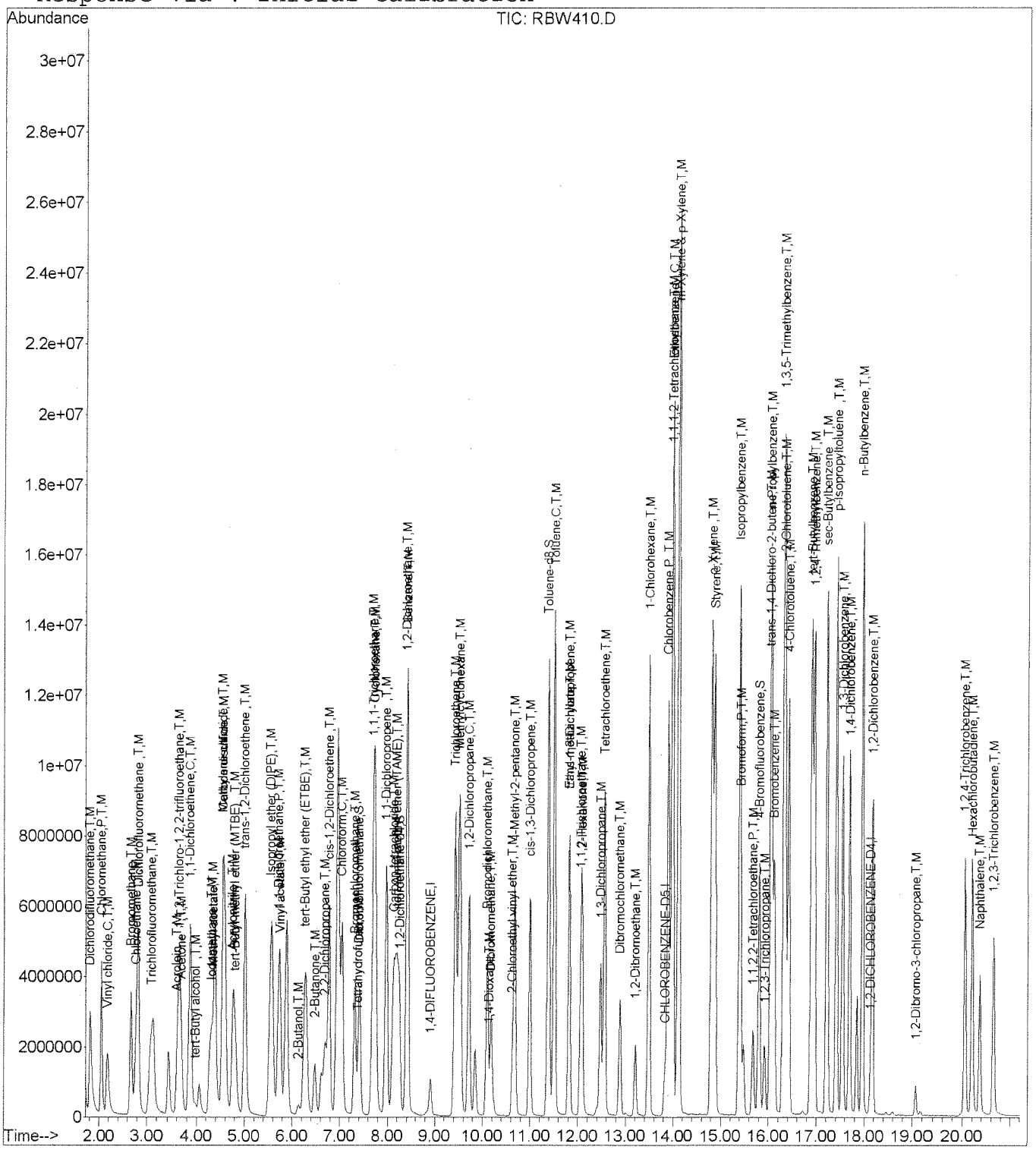
Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW410.D Vial: 11
Acq On : 22 Feb 2016 6:54 pm Operator: ODinh
Sample : VO06B2210 Inst : TO06
Misc : 100ppb 8260+3-ADD/500ppb KET-AA-TBA+2-Bu Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 10:39 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



Sw 2/25/16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F3
IC_Beginning DateTime :01/19/16 19:12
Spike Amount :10 PPB
CC/CV File :RAR097
IC File :RAR090

Column Spec :ZB-624 ID :0.25MM
IC_Ending DateTime :01/19/16 23:24
HPChem Method :vof3a19
Date_Time :01/20/16 00:49

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	2389417	1	1	12.957	12.955	0				
	2	Chlorotrifluoroethylene	10.137	1.4	503174	0.211	0.156	4.436	4.436	41.68	-0.0155	0.2231		0.9954
	3	Dichlorodifluoromethane	10.089	0.9	1016647	0.425	0.422	4.525	4.525	4.15				
	4	Chloromethane	10.122	1.2	1352598	0.566	0.559	4.943	4.956	6.48				
	5	2-Chloro-1,1,1-trifluoroethane	10.967	9.7	1082896	0.453	0.413	5.389	5.393	4.92				
	6	Vinyl chloride	10.225	2.3	1143092	0.478	0.468	5.211	5.213	3.53				
	7	Bromomethane	10.892	8.9	750105	0.314	0.288	5.940	5.945	5.26				
	8	Chloroethane	10.188	1.9	666073	0.279	0.274	6.134	6.142	3.72				
	9	Dichlorofluoromethane	9.832	-1.7	1720728	0.720	0.732	6.492	6.501	7.38				
	10	Trichlorofluoromethane	10.220	2.2	1119895	0.469	0.459	6.611	6.613	3.97				
5	11	Acrolein	50.409	0.8	138345	0.012	0.011	7.460	7.460	7.45				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	10.536	5.4	534197	0.224	0.212	7.564	7.566	4.52				
	13	1,1-Dichloroethene	9.847	-1.5	1476393	0.618	0.628	7.639	7.651	5.58				
5	14	Acetone	47.577	-4.8	398502	0.033	0.035	7.728	7.731	8.22				
	15	Iodomethane	10.312	3.1	1417266	0.593	0.575	8.041	8.040	4.37				
	16	Methyl acetate	9.899	-1.0	293189	0.123	0.124	8.309	8.311	7.23				
	17	Carbon disulfide	10.091	0.9	2988827	1.251	1.240	8.175	8.178	3.93				
	18	Methylene chloride	9.098	-9.0	1091381	0.457	0.502	8.592	8.594	7.44				
5	19	tert-Butyl alcohol	51.946	3.9	156293	0.013	0.013	8.681	8.689	4.72				
	20	tert-Butyl methyl ether (MTBE)	9.750	-2.5	1043778	0.437	0.448	8.994	9.000	3.62				
	21	trans-1,2-Dichloroethene	9.555	-4.5	1315381	0.551	0.576	9.098	9.101	3.53				
5	22	Acrylonitrile	52.904	5.8	584867	0.049	0.046	9.098	9.105	9.42				
	23	Isopropyl ether (DIPE)	9.386	-6.1	2747646	1.150	1.225	9.873	9.876	6.09				
	24	1,1-Dichloroethane	9.266	-7.3	1549823	0.649	0.700	9.962	9.967	5.14				
	25	Vinyl acetate	9.925	-0.8	71628	0.030	0.030	9.948	9.949	9.95				
	26	tert-Butyl ethyl ether (ETBE)	9.450	-5.5	1662709	0.696	0.736	10.588	10.594	3.28				
	27	2,2-Dichloropropane	8.920	-10.8	695030	0.291	0.326	11.035	11.042	10.39				
	28	cis-1,2-Dichloroethene	9.832	-1.7	896994	0.375	0.382	11.065	11.071	4.33				
5	29	2-Butanone	52.515	5.0	741059	0.062	0.059	11.035	11.064	13.53				
5	30	2-Butanol	49.129	-1.7	125092	0.010	0.011	11.273	11.270	9.81				
	31	Bromochloromethane	10.194	1.9	329419	0.138	0.135	11.512	11.512	3.43				
	32	Tetrahydrofuran	8.809	-11.9	96387	0.040	0.046	11.541	11.559	13.09				
	33	Chloroform	9.555	-4.4	1347255	0.564	0.590	11.586	11.583	3.36				
	34	Dibromofluoromethane	10.007	0.1	779451	0.326	0.326	11.854	11.858	4.73				
	35	1,1,1-Trichloroethane	9.788	-2.1	1039791	0.435	0.445	11.884	11.887	7.10				
	36	Cyclohexane	10.063	0.6	1834225	0.768	0.763	11.958	11.960	6.53				
	37	1,1-Dichloropropene	10.110	1.1	433402	0.181	0.179	12.137	12.132	3.08				
	38	Carbon tetrachloride	9.997	-0.0	967938	0.405	0.405	12.137	12.145	3.54				
5	39	tert-Amyl alcohol	52.859	5.7	106398	0.009	0.008	12.331	12.341	13.81				
	40	1,2-Dichloroethane-d4	9.483	-5.2	482662	0.202	0.213	12.405	12.409	5.13				
	41	2,2,4-Trimethylpentane	10.222	2.2	3033624	1.270	1.242	12.450	12.441	4.50				
	42	Benzene	9.694	-3.1	3118563	1.305	1.346	12.465	12.476	3.38				
	43	1,2-Dichloroethane	9.235	-7.7	604848	0.253	0.274	12.524	12.525	4.41				
	44	tert-Amyl methyl ether (TAME)	9.808	-1.9	247016	0.103	0.105	12.495	12.500	2.39				
	45	Trichloroethene	9.931	-0.7	871674	0.365	0.367	13.359	13.364	3.57				
	46	Methylcyclohexane	10.462	4.6	1324510	0.554	0.530	13.582	13.589	5.88				
	47	1,2-Dichloropropane	9.750	-2.5	771200	0.323	0.331	13.686	13.691	5.18				
20	48	1,4-Dioxane	209.166	4.6	52891	0.001	0.001	13.835	13.852	7.80				
	49	Dibromomethane	10.045	0.4	319583	0.134	0.133	13.895	13.894	3.48				
	50	Bromodichloromethane	9.506	-4.9	900332	0.377	0.396	14.044	14.046	1.49				
	51	2-Chloroethyl vinyl ether	9.849	-1.5	181407	0.076	0.077	14.327	14.345	3.75				
	52	cis-1,3-Dichloropropene	9.824	-1.8	1008811	0.422	0.430	14.565	14.575	4.14				
5	53	4-Methyl-2-pentanone	50.033	0.1	1647386	0.138	0.138	14.684	14.695	9.01				
	54	CHLOROBENZENE-D5	10.000	0	1881063	1	1	16.487	16.486	0				
	55	Toluene-d8	9.828	-1.7	2583238	1.373	1.397	14.878	14.885	6.89				
	56	Toluene	9.208	-7.9	3059318	1.626	1.766	14.967	14.968	8.43				
	57	Ethyl methacrylate	9.593	-4.1	468925	0.249	0.260	15.206	15.211	5.46				
	58	trans-1,3-Dichloropropene	9.533	-4.7	714064	0.380	0.398	15.221	15.226	3.32				
	59	1,1,2-Trichloroethane	9.950	-0.5	404530	0.215	0.216	15.444	15.453	3.02				
	60	Tetrachloroethene	9.880	-1.2	587053	0.312	0.316	15.593	15.598	3.91				
5	61	2-Hexanone	50.189	0.4	1065704	0.113	0.113	15.638	15.635	12.39				
	62	1,3-Dichloropropane	9.833	-1.7	733695	0.390	0.397	15.638	15.644	4.26				
	63	Dibromochloromethane	9.865	-1.3	552271	0.294	0.298	15.921	15.921	2.41				
	64	1,2-Dibromoethane	10.312	3.1	427388	0.227	0.220	16.070	16.072	4.39				
	65	1-Chlorohexane	10.098	1.0	1287550	0.684	0.678	16.383	16.380	3.16				
	66	Chlorobenzene	9.878	-1.2	1964530	1.044	1.057	16.517	16.516	2.71				
	67	Ethylbenzene	9.796	-2.0	3475810	1.848	1.886	16.546	16.560	2.96				
	68	1,1,1,2-Tetrachloroethane	9.845	-1.6	613675	0.326	0.331	16.576	16.575	3.08				
2	69	m-Xylene & p-Xylene	19.835	-0.8	5176407	1.376	1.387	16.651	16.657	4.28				
	70	o-Xylene	9.803	-2.0	2531828	1.346	1.373	17.053	17.055	3.96				
	71	Styrene	10.255	2.6	1993837	1.060	1.034	17.068	17.075	6.22				
	72	1,2-DICHLOROBENZENE-D4	10.000	0	555555	1	1	19.064	19.064	0				
	73	Bromoform	10.017	0.2	258154	0.465	0.464	17.351	17.351	5.17				
	74	Isopropylbenzene	9.552	-4.5	3465377	6.238	6.530	17.366	17.370	7.96				
	75	4-Bromofluorobenzene	9.769	-2.3	781870	1.407	1.441	17.574	17.579	10.38				
	76	1,1,2,2-Tetrachloroethane	9.586	-4.1	445357	0.802	0.836	17.678	17.683	9.55				
	77	trans-1,4-Dichloro-2-butene	9.129	-8.7	102326	0.184	0.202	17.723	17.727	10.35				
	78	n-Propylbenzene	9.850	-1.5	4076280	7.337	7.449	17.738	17.747	5.02				
	79	1,2,3-Trichloropropane	9.935	-0.7	109445	0.197	0.198	17.753	17.756	8.29				

SA 1/28/16

80	Bromobenzene	10.086	0.9	613137	1.104	1.094	17.768	17.770	3.70				
81	1,3,5-Trimethylbenzene	9.634	-3.7	2548126	4.587	4.761	17.872	17.877	5.53				
82	2-Chlorotoluene	9.327	-6.7	2370077	4.266	4.574	17.887	17.899	5.31				
83	4-Chlorotoluene	9.885	-1.1	2129767	3.834	3.878	17.991	17.992	4.02				
84	tert-Butylbenzene	9.736	-2.6	538693	0.970	0.996	18.200	18.206	6.09				
85	1,2,4-Trimethylbenzene	9.818	-1.8	2406980	4.333	4.413	18.245	18.249	4.46				
86	sec-Butylbenzene	9.949	-0.5	3549537	6.389	6.422	18.393	18.406	3.42				
87	p-Isopropyltoluene	10.180	1.8	2622532	4.721	4.637	18.498	18.510	4.43				
88	1,3-Dichlorobenzene	9.873	-1.3	1115943	2.009	2.035	18.617	18.617	4.09				
89	1,4-Dichlorobenzene	10.041	0.4	1085668	1.954	1.946	18.691	18.696	3.59				
90	Benzyl Chloride	8.672	-13.3	483388	0.870	1.003	18.811	18.806	5.29				
91	n-Butylbenzene	10.369	3.7	2380710	4.285	4.133	18.900	18.904	6.92				
92	1,2-Dichlorobenzene	9.834	-1.7	918130	1.653	1.680	19.079	19.082	3.00				
93	1,2-Dibromo-3-chloropropane	10.214	2.1	51638	0.093	0.091	19.898	19.901	8.92				
94	1,2,4-Trichlorobenzene	10.225	2.2	460061	0.828	0.810	20.807	20.812	10.05				
95	Hexachlorobutadiene	10.649	6.5	340489	0.613	0.575	20.896	20.899	6.51				
96	Naphthalene	9.679	-3.2	676783	1.218	1.259	21.179	21.184	10.78				
97	1,2,3-Trichlorobenzene	10.012	0.1	351486	0.633	0.632	21.492	21.495	8.63				

Spike Amount = Nominal Amount * M

SG
1/28/16

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D Vial: 14
Acq On : 20 Jan 2016 12:49 am Operator: ODinh
Sample : IVOF3A1901 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	94	0.00
2	T,M	Chlorotrifluoroethylene	10.000	10.137	-1.4	118	0.00
3	T,M	Dichlorodifluoromethane	10.000	10.089	-0.9	96	0.00
4	P,T,M	Chloromethane	10.000	10.122	-1.2	95	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	10.967	-9.7	105	0.00
6	C,T,M	Vinyl chloride	10.000	10.225	-2.2	97	-0.01
7	T,M	Bromomethane	10.000	10.892	-8.9	102	-0.01
8	T,M	Chloroethane	10.000	10.187	-1.9	99	-0.01
9	T,M	Dichlorofluoromethane	10.000	9.831	1.7	97	-0.01
10	T,M	Trichlorofluoromethane	10.000	10.220	-2.2	97	0.00
11	T,M	Acrolein	50.000	50.409	-0.8	93	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	10.536	-5.4	105	0.00
13	C,T,M	1,1-Dichloroethene	10.000	9.847	1.5	94	-0.01
14	T,M	Acetone	50.000	47.577	4.8	85	0.00
15	T,M	Iodomethane	10.000	10.312	-3.1	99	0.00
16	T,M	Methyl acetate	10.000	9.899	1.0	86	0.00
17	T,M	Carbon disulfide	10.000	10.091	-0.9	95	0.00
18	T,M	Methylene chloride	10.000	9.098	9.0	88	0.00
19	T,M	tert-Butyl alcohol	50.000	51.946	-3.9	100	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	9.750	2.5	88	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	9.555	4.5	87	0.00
22	T,M	Acrylonitrile	50.000	52.904	-5.8	91	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	9.386	6.1	82	0.00
24	P,T,M	1,1-Dichloroethane	10.000	9.266	7.3	84	0.00
25	T,M	Vinyl acetate	10.000	9.924	0.8	90	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	9.450	5.5	85	0.00
27	T,M	2,2-Dichloropropane	10.000	8.920	10.8	81	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.831	1.7	90	0.00
29	T,M	2-Butanone	50.000	52.515	-5.0	87	0.00
30	T,M	2-Butanol	50.000	49.129	1.7	97	0.00
31	T,M	Bromochloromethane	10.000	10.194	-1.9	92	0.00
32	T,M	Tetrahydrofuran	10.000	8.809	11.9	87	-0.01
33	C,T,M	Chloroform	10.000	9.555	4.5	86	0.00
34	S	Dibromofluoromethane	10.000	10.008	-0.1	90	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.787	2.1	87	0.00
36	T,M	Cyclohexane	10.000	10.063	-0.6	90	0.00
37	T,M	1,1-Dichloropropene	10.000	10.110	-1.1	92	0.00
38	T,M	Carbon tetrachloride	10.000	9.997	0.0	88	0.00
39	T,M	tert-Amyl alcohol	50.000	52.859	-5.7	99	0.00
40	S	1,2-Dichloroethane-d4	10.000	9.483	5.2	86	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	10.222	-2.2	92	0.02

(#) = Out of Range

SY 1/28/16

249

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D Vial: 14
Acq On : 20 Jan 2016 12:49 am Operator: ODinh
Sample : IVOF3A1901 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.694	3.1	90	0.00
43	T,M	1,2-Dichloroethane	10.000	9.235	7.7	84	0.00
44	T,M	tert-Amyl methyl ether (TAM	10.000	9.808	1.9	91	0.00
45	T,M	Trichloroethene	10.000	9.931	0.7	92	0.00
46	T,M	Methylcyclohexane	10.000	10.462	-4.6	92	0.00
47	C,T,M	1,2-Dichloropropane	10.000	9.750	2.5	87	0.00
48	T,M	1,4-Dioxane	200.000	209.166	-4.6	102	-0.01
49	T,M	Dibromomethane	10.000	10.045	-0.4	90	0.00
50	T,M	Bromodichloromethane	10.000	9.506	4.9	87	0.00
51	T,M	2-Chloroethyl vinyl ether	10.000	9.849	1.5	92	0.00
52	T,M	cis-1,3-Dichloropropene	10.000	9.824	1.8	87	0.00
53	T,M	4-Methyl-2-pentanone	50.000	50.033	-0.1	86	0.00
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	96	0.00
55	S	Toluene-d8	10.000	9.828	1.7	90	0.00
56	C,T,M	Toluene	10.000	9.208	7.9	89	0.00
57	T,M	Ethyl methacrylate	10.000	9.593	4.1	91	0.00
58	T,M	trans-1,3-Dichloropropene	10.000	9.533	4.7	87	0.00
59	T,M	1,1,2-Trichloroethane	10.000	9.950	0.5	92	0.00
60	T,M	Tetrachloroethene	10.000	9.880	1.2	93	0.00
61	T,M	2-Hexanone	50.000	50.189	-0.4	89	0.00
62	T,M	1,3-Dichloropropane	10.000	9.833	1.7	91	0.00
63	T,M	Dibromochloromethane	10.000	9.865	1.3	93	0.00
64	T,M	1,2-Dibromoethane	10.000	10.312	-3.1	96	0.00
65	T,M	1-Chlorohexane	10.000	10.098	-1.0	93	0.02
66	P,M	Chlorobenzene	10.000	9.878	1.2	93	0.00
67	C,T,M	Ethylbenzene	10.000	9.796	2.0	90	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	10.000	9.845	1.5	93	0.00
69	T,M	m-Xylene & p-Xylene	20.000	19.835	0.8	90	0.00
70	T,M	o-Xylene	10.000	9.803	2.0	92	0.00
71	T,M	Styrene	10.000	10.255	-2.6	95	0.00
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	103	0.00
73	P,T,M	Bromoform	10.000	10.017	-0.2	99	0.00
74	T,M	Isopropylbenzene	10.000	9.552	4.5	96	0.00
75	S	4-Bromofluorobenzene	10.000	9.769	2.3	94	0.00
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.586	4.1	97	0.00
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.129	8.7	97	0.00
78	T,M	n-Propylbenzene	10.000	9.850	1.5	95	0.00
79	T,M	1,2,3-Trichloropropane	10.000	9.935	0.6	100	0.00
80	T,M	Bromobenzene	10.000	10.086	-0.9	101	0.00

(#) = Out of Range

SY 1/28/16

256

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D Vial: 14
Acq On : 20 Jan 2016 12:49 am Operator: ODinh
Sample : IVOF3A1901 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.634	3.7	96	0.00
82	T,M	2-Chlorotoluene	10.000	9.327	6.7	94	-0.01
83	T,M	4-Chlorotoluene	10.000	9.885	1.2	96	0.00
84	T,M	tert-Butylbenzene	10.000	9.737	2.6	100	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	9.819	1.8	95	0.00
86	T,M	sec-Butylbenzene	10.000	9.949	0.5	98	-0.01
87	T,M	p-Isopropyltoluene	10.000	10.180	-1.8	97	-0.01
88	T,M	1,3-Dichlorobenzene	10.000	9.873	1.3	99	0.00
89	T,M	1,4-Dichlorobenzene	10.000	10.041	-0.4	99	0.00
90	T,M	Benzyl Chloride	10.000	8.672	13.3	86	0.00
91	T,M	n-Butylbenzene	10.000	10.369	-3.7	98	0.00
92	T,M	1,2-Dichlorobenzene	10.000	9.834	1.7	100	0.00
93	T,M	1,2-Dibromo-3-chloropropane	10.000	10.214	-2.1	100	0.00
94	T,M	1,2,4-Trichlorobenzene	10.000	10.225	-2.2	101	0.00
95	T,M	Hexachlorobutadiene	10.000	10.650	-6.5	101	0.00
96	T,M	Naphthalene	10.000	9.679	3.2	102	0.00
97	T,M	1,2,3-Trichlorobenzene	10.000	10.012	-0.1	100	0.00

SU 1/28/16

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D
Acq On : 20 Jan 2016 12:49 am
Sample : IVOF3A1901
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P

Vial: 14
Operator: ODinh
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	94	0.00
2	T,M	Chlorotrifluoroethylene	0.156	0.211	-35.3#	118	0.00
3	T,M	Dichlorodifluoromethane	0.422	0.425	-0.7	96	0.00
4	P,T,M	Chloromethane	0.559	0.566	-1.3	95	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.413	0.453	-9.7	105	0.00
6	C,T,M	Vinyl chloride	0.468	0.478	-2.1	97	-0.01
7	T,M	Bromomethane	0.288	0.314	-9.0	102	-0.01
8	T,M	Chloroethane	0.274	0.279	-1.8	99	-0.01
9	T,M	Dichlorofluoromethane	0.732	0.720	1.6	97	-0.01
10	T,M	Trichlorofluoromethane	0.459	0.469	-2.2	97	0.00
11	T,M	Acrolein	0.011	0.012	-9.1	93	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.212	0.224	-5.7	105	0.00
13	C,T,M	1,1-Dichloroethene	0.628	0.618	1.6	94	-0.01
14	T,M	Acetone	0.035	0.033	5.7	85	0.00
15	T,M	Iodomethane	0.575	0.593	-3.1	99	0.00
16	T,M	Methyl acetate	0.124	0.123	0.8	86	0.00
17	T,M	Carbon disulfide	1.240	1.251	-0.9	95	0.00
18	T,M	Methylene chloride	0.502	0.457	9.0	88	0.00
19	T,M	tert-Butyl alcohol	0.013	0.013	0.0	100	0.00
20	T,M	tert-Butyl methyl ether (MT	0.448	0.437	2.5	88	0.00
21	T,M	trans-1,2-Dichloroethene	0.576	0.551	4.3	87	0.00
22	T,M	Acrylonitrile	0.046	0.049	-6.5	91	0.00
23	T,M	Isopropyl ether (DIPE)	1.225	1.150	6.1	82	0.00
24	P,T,M	1,1-Dichloroethane	0.700	0.649	7.3	84	0.00
25	T,M	Vinyl acetate	0.030	0.030	0.0	90	0.00
26	T,M	tert-Butyl ethyl ether (ETB	0.736	0.696	5.4	85	0.00
27	T,M	2,2-Dichloropropane	0.326	0.291	10.7	81	0.00
28	T,M	cis-1,2-Dichloroethene	0.382	0.375	1.8	90	0.00
29	T,M	2-Butanone	0.059	0.062	-5.1	87	0.00
30	T,M	2-Butanol	0.011	0.010	9.1	97	0.00
31	T,M	Bromochloromethane	0.135	0.138	-2.2	92	0.00
32	T,M	Tetrahydrofuran	0.046	0.040	13.0	87	-0.01
33	C,T,M	Chloroform	0.590	0.564	4.4	86	0.00
34	S	Dibromofluoromethane	0.326	0.326	0.0	90	0.00
35	T,M	1,1,1-Trichloroethane	0.445	0.435	2.2	87	0.00
36	T,M	Cyclohexane	0.763	0.768	-0.7	90	0.00
37	T,M	1,1-Dichloropropene	0.179	0.181	-1.1	92	0.00
38	T,M	Carbon tetrachloride	0.405	0.405	0.0	88	0.00
39	T,M	tert-Amyl alcohol	0.008	0.009	-12.5	99	0.00
40	S	1,2-Dichloroethane-d4	0.213	0.202	5.2	86	0.00
41	T,M	2,2,4-Trimethylpentane	1.242	1.270	-2.3	92	0.02

(#) = Out of Range

SG 1/28/16

252

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D Vial: 14
Acq On : 20 Jan 2016 12:49 am Operator: ODinh
Sample : IVOF3A1901 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.346	1.305	3.0	90	0.00
43	T,M	1,2-Dichloroethane	0.274	0.253	7.7	84	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.105	0.103	1.9	91	0.00
45	T,M	Trichloroethene	0.367	0.365	0.5	92	0.00
46	T,M	Methylcyclohexane	0.530	0.554	-4.5	92	0.00
47	C,T,M	1,2-Dichloropropane	0.331	0.323	2.4	87	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	102	-0.01
49	T,M	Dibromomethane	0.133	0.134	-0.8	90	0.00
50	T,M	Bromodichloromethane	0.396	0.377	4.8	87	0.00
51	T,M	2-Chloroethyl vinyl ether	0.077	0.076	1.3	92	0.00
52	T,M	cis-1,3-Dichloropropene	0.430	0.422	1.9	87	0.00
53	T,M	4-Methyl-2-pentanone	0.138	0.138	0.0	86	0.00
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	96	0.00
55	S	Toluene-d8	1.397	1.373	1.7	90	0.00
56	C,T,M	Toluene	1.766	1.626	7.9	89	0.00
57	T,M	Ethyl methacrylate	0.260	0.249	4.2	91	0.00
58	T,M	trans-1,3-Dichloropropene	0.398	0.380	4.5	87	0.00
59	T,M	1,1,2-Trichloroethane	0.216	0.215	0.5	92	0.00
60	T,M	Tetrachloroethene	0.316	0.312	1.3	93	0.00
61	T,M	2-Hexanone	0.113	0.113	0.0	89	0.00
62	T,M	1,3-Dichloropropane	0.397	0.390	1.8	91	0.00
63	T,M	Dibromochloromethane	0.298	0.294	1.3	93	0.00
64	T,M	1,2-Dibromoethane	0.220	0.227	-3.2	96	0.00
65	T,M	1-Chlorohexane	0.678	0.684	-0.9	93	0.02
66	P,M	Chlorobenzene	1.057	1.044	1.2	93	0.00
67	C,T,M	Ethylbenzene	1.886	1.848	2.0	90	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	0.331	0.326	1.5	93	0.00
69	T,M	m-Xylene & p-Xylene	1.387	1.376	0.8	90	0.00
70	T,M	o-Xylene	1.373	1.346	2.0	92	0.00
71	T,M	Styrene	1.034	1.060	-2.5	95	0.00
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	103	0.00
73	P,T,M	Bromoform	0.464	0.465	-0.2	99	0.00
74	T,M	Isopropylbenzene	6.530	6.238	4.5	96	0.00
75	S	4-Bromofluorobenzene	1.441	1.407	2.4	94	0.00
76	P,T,M	1,1,2,2-Tetrachloroethane	0.836	0.802	4.1	97	0.00
77	T,M	trans-1,4-Dichloro-2-butene	0.202	0.184	8.9	97	0.00
78	T,M	n-Propylbenzene	7.449	7.337	1.5	95	0.00
79	T,M	1,2,3-Trichloropropane	0.198	0.197	0.5	100	0.00
80	T,M	Bromobenzene	1.094	1.104	-0.9	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D Vial: 14
Acq On : 20 Jan 2016 12:49 am Operator: ODinh
Sample : IVOF3A1901 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	4.761	4.587	3.7	96	0.00
82	T,M	2-Chlorotoluene	4.574	4.266	6.7	94	-0.01
83	T,M	4-Chlorotoluene	3.878	3.834	1.1	96	0.00
84	T,M	tert-Butylbenzene	0.996	0.970	2.6	100	0.00
85	T,M	1,2,4-Trimethylbenzene	4.413	4.333	1.8	95	0.00
86	T,M	sec-Butylbenzene	6.422	6.389	0.5	98	-0.01
87	T,M	p-Isopropyltoluene	4.637	4.721	-1.8	97	-0.01
88	T,M	1,3-Dichlorobenzene	2.035	2.009	1.3	99	0.00
89	T,M	1,4-Dichlorobenzene	1.946	1.954	-0.4	99	0.00
90	T,M	Benzyl Chloride	1.003	0.870	13.3	86	0.00
91	T,M	n-Butylbenzene	4.133	4.285	-3.7	98	0.00
92	T,M	1,2-Dichlorobenzene	1.680	1.653	1.6	100	0.00
93	T,M	1,2-Dibromo-3-chloropropane	0.091	0.093	-2.2	100	0.00
94	T,M	1,2,4-Trichlorobenzene	0.810	0.828	-2.2	101	0.00
95	T,M	Hexachlorobutadiene	0.575	0.613	-6.6	101	0.00
96	T,M	Naphthalene	1.259	1.218	3.3	102	0.00
97	T,M	1,2,3-Trichlorobenzene	0.632	0.633	-0.2	100	0.00

SY 1/28/16

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D
Vial: 14
Acq On : 20 Jan 2016 12:49 am
Operator: ODinh
Sample : IVOF3A1901
Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA
Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Jan 28 16:41 2016
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.96	114	2389417	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	16.49	117	1881063	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	19.06	152	555555	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	11.85	111	779451	10.01 ug/l	0.00
Spiked Amount 10.000			Recovery	= 100.10%	
40) 1,2-Dichloroethane-d4	12.41	65	482662	9.48 ug/l	0.00
Spiked Amount 10.000			Recovery	= 94.80%	
55) Toluene-d8	14.88	98	2583238	9.83 ug/l	0.00
Spiked Amount 10.000			Recovery	= 98.30%	
75) 4-Bromofluorobenzene	17.57	95	781870	9.77 ug/l	0.00
Spiked Amount 10.000			Recovery	= 97.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	4.44	116	503174	10.14 ug/l	97
3) Dichlorodifluoromethane	4.53	85	1016647	10.09 ug/l	99
4) Chloromethane	4.94	50	1352598	10.12 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	5.39	118	1082896	10.97 ug/l	97
6) Vinyl chloride	5.21	62	1143092	10.23 ug/l	100
7) Bromomethane	5.94	94	750105	10.89 ug/l	100
8) Chloroethane	6.13	64	666073	10.19 ug/l	99
9) Dichlorofluoromethane	6.49	67	1720728	9.83 ug/l	100
10) Trichlorofluoromethane	6.61	101	1119895	10.22 ug/l	99
11) Acrolein	7.46	56	138345	50.41 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.56	151	534197	10.54 ug/l	99
13) 1,1-Dichloroethene	7.64	61	1476393	9.85 ug/l	98
14) Acetone	7.73	43	398502	47.58 ug/l	95
15) Iodomethane	8.04	142	1417266	10.31 ug/l	98
16) Methyl acetate	8.31	43	293189	9.90 ug/l	99
17) Carbon disulfide	8.17	76	2988827	10.09 ug/l	100
18) Methylene chloride	8.59	49	1091381	9.10 ug/l	95
19) tert-Butyl alcohol	8.68	59	156293	51.95 ug/l	94
20) tert-Butyl methyl ether (M	8.99	73	1043778	9.75 ug/l	99
21) trans-1,2-Dichloroethene	9.10	61	1315381	9.55 ug/l	97
22) Acrylonitrile	9.10	53	584867	52.90 ug/l	99
23) Isopropyl ether (DIPE)	9.87	45	2747646	9.39 ug/l	97
24) 1,1-Dichloroethane	9.96	63	1549823	9.27 ug/l	99
25) Vinyl acetate	9.95	86	71628	9.92 ug/l #	85
26) tert-Butyl ethyl ether (ET	10.59	59	1662709	9.45 ug/l	99
27) 2,2-Dichloropropane	11.03	77	695030	8.92 ug/l	98
28) cis-1,2-Dichloroethene	11.06	96	896994	9.83 ug/l	96

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

SY 1/28/16

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D
Acq On : 20 Jan 2016 12:49 am
Sample : IVOF3A1901
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 28 16:41 2016

Vial: 14
Operator: ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	2-Butanone	11.03	43	741059	52.51 ug/l	97
30)	2-Butanol	11.27	45	125092	49.13 ug/l	98
31)	Bromochloromethane	11.51	128	329419	10.19 ug/l	92
32)	Tetrahydrofuran	11.54	42	96387	8.81 ug/l	98
33)	Chloroform	11.59	83	1347255	9.56 ug/l	99
35)	1,1,1-Trichloroethane	11.88	97	1039791	9.79 ug/l	99
36)	Cyclohexane	11.96	56	1834225	10.06 ug/l	97
37)	1,1-Dichloropropene	12.14	110	433402	10.11 ug/l	99
38)	Carbon tetrachloride	12.14	119	967938	10.00 ug/l	100
39)	tert-Amyl alcohol	12.33	59	106398	52.86 ug/l	97
41)	2,2,4-Trimethylpentane	12.45	57	3033624	10.22 ug/l	98
42)	Benzene	12.46	78	3118563	9.69 ug/l	99
43)	1,2-Dichloroethane	12.52	62	604848	9.23 ug/l	99
44)	tert-Amyl methyl ether (TA	12.49	87	247016	9.81 ug/l	94
45)	Trichloroethene	13.36	130	871674	9.93 ug/l	97
46)	Methylcyclohexane	13.58	83	1324510	10.46 ug/l	98
47)	1,2-Dichloropropane	13.69	63	771200	9.75 ug/l	97
48)	1,4-Dioxane	13.84	88	52891	209.17 ug/l	95
49)	Dibromomethane	13.89	93	319583	10.04 ug/l	97
50)	Bromodichloromethane	14.04	83	900332	9.51 ug/l	100
51)	2-Chloroethyl vinyl ether	14.33	63	181407	9.85 ug/l	100
52)	cis-1,3-Dichloropropene	14.57	75	1008811	9.82 ug/l	98
53)	4-Methyl-2-pentanone	14.68	43	1647386	50.03 ug/l	98
56)	Toluene	14.97	91	3059318	9.21 ug/l	100
57)	Ethyl methacrylate	15.21	69	468925	9.59 ug/l	97
58)	trans-1,3-Dichloropropene	15.22	75	714064	9.53 ug/l	98
59)	1,1,2-Trichloroethane	15.44	97	404530	9.95 ug/l	99
60)	Tetrachloroethene	15.59	164	587053	9.88 ug/l	100
61)	2-Hexanone	15.64	43	1065704	50.19 ug/l	98
62)	1,3-Dichloropropane	15.64	76	733695	9.83 ug/l	100
63)	Dibromochloromethane	15.92	129	552271	9.87 ug/l	99
64)	1,2-Dibromoethane	16.07	107	427388	10.31 ug/l	99
65)	1-Chlorohexane	16.38	91	1287550	10.10 ug/l	98
66)	Chlorobenzene	16.52	112	1964530	9.88 ug/l	98
67)	Ethylbenzene	16.55	91	3475810	9.80 ug/l	99
68)	1,1,1,2-Tetrachloroethane	16.58	131	613675	9.84 ug/l	100
69)	m-Xylene & p-Xylene	16.65	91	5176407	19.83 ug/l	99
70)	o-Xylene	17.05	91	2531828	9.80 ug/l	98
71)	Styrene	17.07	104	1993837	10.26 ug/l	99
73)	Bromoform	17.35	173	258154	10.02 ug/l	100
74)	Isopropylbenzene	17.37	105	3465377	9.55 ug/l	100

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

SY 1/28/16

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D
Acq On : 20 Jan 2016 12:49 am
Sample : IVOF3A1901
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 28 16:41 2016

Vial: 14
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	17.68	83	445357	9.59 ug/l	100
77)	trans-1,4-Dichloro-2-buten	17.72	53	102326	9.13 ug/l	97
78)	n-Propylbenzene	17.74	91	4076280	9.85 ug/l	99
79)	1,2,3-Trichloropropane	17.75	110	109445	9.93 ug/l	97
80)	Bromobenzene	17.77	156	613137	10.09 ug/l	96
81)	1,3,5-Trimethylbenzene	17.87	105	2548126	9.63 ug/l	100
82)	2-Chlorotoluene	17.89	91	2370077	9.33 ug/l	99
83)	4-Chlorotoluene	17.99	91	2129767	9.89 ug/l	99
84)	tert-Butylbenzene	18.20	134	538693	9.74 ug/l	94
85)	1,2,4-Trimethylbenzene	18.24	105	2406980	9.82 ug/l	99
86)	sec-Butylbenzene	18.39	105	3549537	9.95 ug/l	100
87)	p-Isopropyltoluene	18.50	119	2622532	10.18 ug/l	99
88)	1,3-Dichlorobenzene	18.62	146	1115943	9.87 ug/l	99
89)	1,4-Dichlorobenzene	18.69	146	1085668	10.04 ug/l	99
90)	Benzyl Chloride	18.81	91	483388	8.67 ug/l	99
91)	n-Butylbenzene	18.90	91	2380710	10.37 ug/l	100
92)	1,2-Dichlorobenzene	19.08	146	918130	9.83 ug/l	100
93)	1,2-Dibromo-3-chloropropan	19.90	157	51638	10.21 ug/l	97
94)	1,2,4-Trichlorobenzene	20.81	180	460061	10.22 ug/l	99
95)	Hexachlorobutadiene	20.90	225	340489	10.65 ug/l	99
96)	Naphthalene	21.18	128	676783	9.68 ug/l	99
97)	1,2,3-Trichlorobenzene	21.49	180	351486	10.01 ug/l	100

S 4 1/28/16

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

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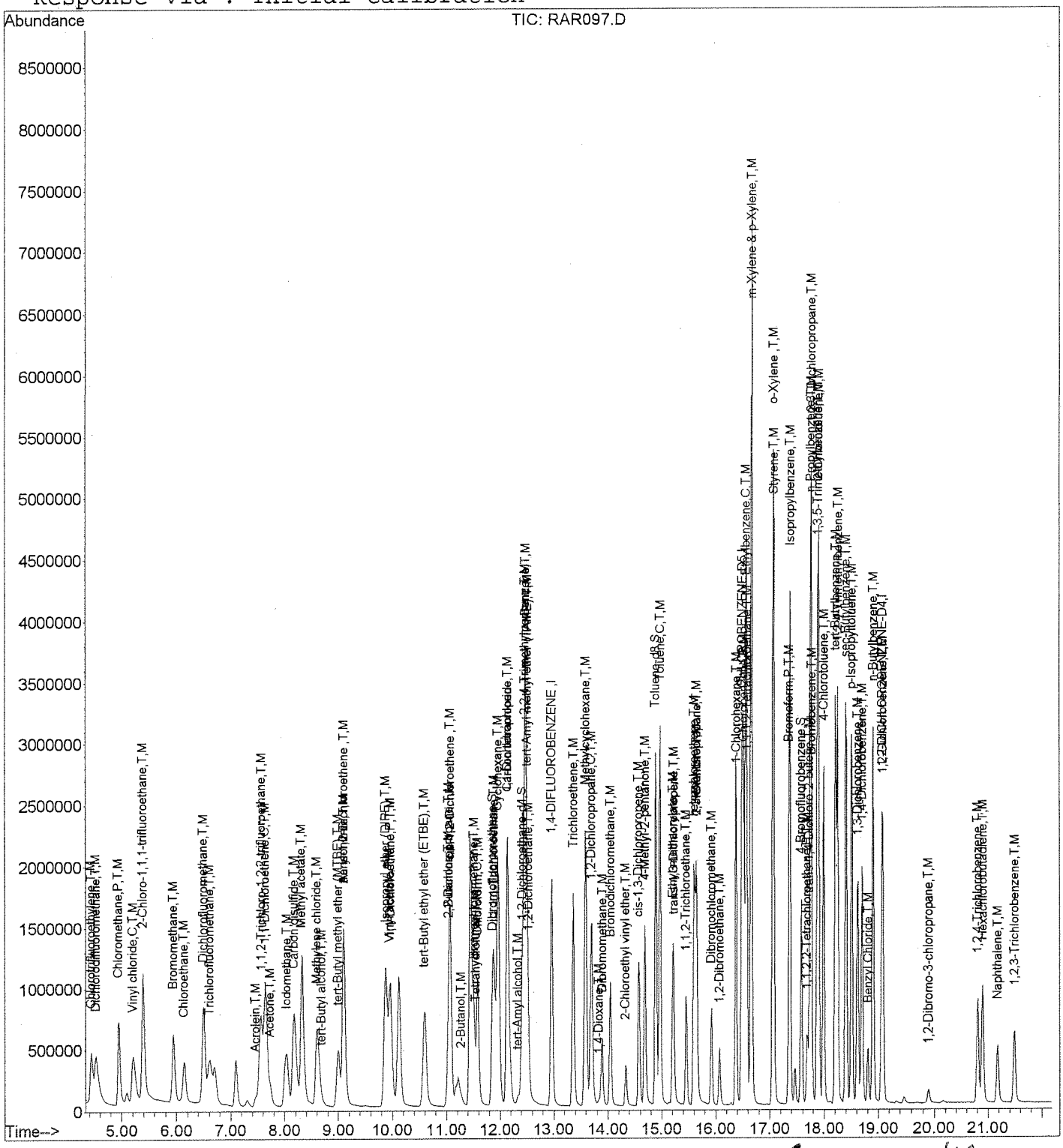
Quantitation Report

Data File : C:\HPCHEM\1\DATA\16A19\RAR097.D
Acq On : 20 Jan 2016 12:49 am
Sample : IVOF3A1901
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Jan 28 16:41 2016

Vial: 14
Operator: ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



SU 1/28/16

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CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :T006
IC_Beginning DateTime :02/22/16 15:06
Spike Amount :10 PPB
CC/CV File :RBW413
IC File :RBW406

Column Spec :RTX502.2 ID :0.25MM
IC_Ending DateTime :02/22/16 18:54
HPChem Method :V006B22
Date_Time :02/22/16 20:09

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	1502345	1	1	8.909	8.907	0				
	2	Dichlorodifluoromethane	10.488	4.9	615234	0.410	0.390	1.814	1.818	8.71				
	3	Chloromethane	11.215	12.1	714907	0.476	0.424	2.052	2.049	5.95				
	4	Vinyl chloride	11.108	11.1	650496	0.433	0.390	2.171	2.180	9.17				
	5	Bromomethane	10.815	8.2	417644	0.278	0.257	2.677	2.678	6.94				
	6	Chloroethane	10.492	4.9	363584	0.242	0.231	2.781	2.781	5.83				
	7	Dichlorofluoromethane	10.697	7.0	975326	0.649	0.607	2.810	2.816	7.90				
	8	Trichlorofluoromethane	10.510	5.1	619706	0.412	0.392	3.078	3.078	7.48				
5	9	Acrolein	52.714	5.4	126738	0.017	0.016	3.599	3.595	14.82				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	11.267	12.7	328671	0.219	0.194	3.643	3.643	9.19				
5	11	Acetone	54.620	9.2	203219	0.027	0.027	3.688	3.685	20.87	0.0090	0.0231		0.9968
	12	1,1-Dichloroethene	10.755	7.5	834858	0.556	0.517	3.866	3.863	6.67				
5	13	tert-Butyl alcohol	51.031	2.1	77022	0.010	0.010	3.971	3.977	12.97				
	14	Acetonitrile												
	15	Methyl acetate	10.660	6.6	159923	0.106	0.114	4.343	4.339	30.07	0.0096	0.0909		0.9979
	16	Iodomethane	10.813	8.1	816435	0.543	0.503	4.283	4.298	7.61				
	17	Methylene chloride	10.654	6.5	587650	0.391	0.367	4.551	4.551	6.34				
	18	Carbon disulfide	10.340	3.4	1881796	1.253	1.211	4.551	4.555	9.37				
5	19	Acrylonitrile	51.660	3.3	332407	0.044	0.043	4.759	4.760	8.46				
	20	tert-Butyl methyl ether (MTBE)	10.162	1.6	701893	0.467	0.460	4.804	4.800	8.02				
	21	trans-1,2-Dichloroethene	10.685	6.8	751874	0.500	0.468	4.997	5.009	6.41				
	22	Isopropyl ether (DIPE)	10.655	6.6	1577169	1.050	0.985	5.562	5.559	7.43				
	23	Vinyl acetate	10.984	9.8	481536	0.321	0.292	5.755	5.758	11.67				
	24	1,1-Dichloroethane	10.614	6.1	910652	0.606	0.571	5.726	5.724	6.95				
5	25	2-Butanol	51.673	3.3	67250	0.009	0.009	6.142	6.139	13.73				
	26	tert-Butyl ethyl ether (ETBE)	10.765	7.6	1191898	0.793	0.737	6.276	6.277	5.72				
5	27	2-Butanone	50.682	1.4	96898	0.013	0.013	6.469	6.482	13.13				
	28	2,2-Dichloropropane	9.980	-0.2	399604	0.266	0.267	6.693	6.693	6.82				
	29	cis-1,2-Dichloroethene	10.544	5.4	548929	0.365	0.347	6.767	6.771	7.47				
	30	Chloroform	10.506	5.1	801278	0.533	0.508	7.035	7.039	6.39				
5	31	tert-Amyl alcohol												
	32	Bromochloromethane	10.870	8.7	362992	0.242	0.222	7.302	7.307	8.73				
	33	Tetrahydrofuran	10.188	1.9	50179	0.033	0.033	7.362	7.374	7.48				
	34	Dibromofluoromethane	10.526	5.3	448796	0.299	0.284	7.406	7.406	5.73				
	35	1,1,1-Trichloroethane	10.478	4.8	597566	0.398	0.380	7.704	7.705	8.27				
	36	Cyclohexane	10.853	8.5	1032493	0.687	0.633	7.719	7.717	5.22				
	37	2,2,4-Trimethylpentane												
	38	1,1-Dichloropropene	10.848	8.5	274283	0.183	0.168	7.972	7.971	7.51				
	39	Carbon tetrachloride	10.708	7.1	561099	0.373	0.349	8.120	8.122	6.34				
	40	tert-Amyl methyl ether (TAME)	9.976	-0.2	190873	0.127	0.127	8.180	8.192	13.25				
	41	1,2-Dichloroethane-d4	10.299	3.0	320906	0.214	0.207	8.239	8.244	7.07				
	42	1,2-Dichloroethane	10.738	7.4	388618	0.259	0.241	8.403	8.401	7.04				
	43	Benzene	10.640	6.4	2044050	1.361	1.279	8.403	8.407	7.29				
	44	Trichloroethene	10.796	8.0	570513	0.380	0.352	9.429	9.425	7.31				
	45	Methylcyclohexane	10.652	6.5	901838	0.600	0.564	9.504	9.509	6.75				
	46	1,2-Dichloropropane	10.543	5.4	499544	0.333	0.315	9.712	9.716	7.05				
20	47	1,4-Dioxane	207.080	3.5	38918	0.001	0.001	10.143	10.142	7.29				
	48	Bromodichloromethane	10.564	5.6	558997	0.372	0.352	10.084	10.095	9.71				
	49	Dibromomethane	10.774	7.7	207529	0.138	0.128	10.173	10.174	7.28				
	50	2-Chloroethyl vinyl ether	10.182	1.8	106685	0.071	0.070	10.634	10.632	8.10				
5	51	4-Methyl-2-pentanone	55.151	10.3	1079140	0.144	0.130	10.664	10.671	9.01				
	52	cis-1,3-Dichloropropene	10.538	5.4	692978	0.461	0.438	10.991	10.994	8.25				
	53	CHLOROBENZENE-D5	10.000	0	1283994	1	1	13.817	13.821	0				
	54	Toluene-d8	10.581	5.8	1778913	1.385	1.309	11.378	11.376	6.56				
	55	Toluene	10.465	4.7	2112012	1.645	1.572	11.497	11.501	9.04				
	56	Ethyl methacrylate	10.817	8.2	338412	0.264	0.244	11.809	11.816	9.87				
	57	trans-1,3-Dichloropropene	10.309	3.1	494817	0.385	0.374	11.809	11.813	13.57				
	58	1,1,2-Trichloroethane	10.262	2.6	270059	0.210	0.205	12.062	12.059	7.15				
5	59	2-Hexanone	55.842	11.7	655155	0.102	0.091	12.092	12.089	11.22				
	60	1,3-Dichloropropane	10.599	6.0	505476	0.394	0.371	12.464	12.469	7.04				
	61	Tetrachloroethene	10.684	6.8	419014	0.326	0.305	12.553	12.557	8.30				
	62	Dibromochloromethane	10.867	8.7	351454	0.274	0.252	12.880	12.883	7.79				
	63	2-Ethyl-1-butanol												
	64	1,2-Dibromoethane	10.644	6.4	269137	0.210	0.197	13.207	13.207	7.65				
	65	1-Chlorohexane	10.905	9.0	933227	0.727	0.666	13.475	13.487	7.33				
	66	Chlorobenzene	10.761	7.6	1272519	0.991	0.921	13.877	13.888	7.38				
	67	1,1,1,2-Tetrachloroethane	10.610	6.1	407025	0.317	0.299	13.951	13.961	7.01				
	68	Ethylbenzene	10.952	9.5	2339696	1.822	1.664	13.966	13.977	7.78				
2	69	m-Xylene & p-Xylene	21.674	8.4	3358757	1.308	1.207	14.100	14.100	6.57				
	70	o-Xylene	10.664	6.6	1708681	1.331	1.248	14.799	14.804	7.17				
	71	Styrene	10.649	6.5	1318639	1.027	0.964	14.858	14.868	7.36				
	72	Isopropylbenzene	11.076	10.8	2083063	1.622	1.465	15.394	15.392	7.00				
	73	1,2-DICHLOROBENZENE-D4	10.000	0	446545	1	1	18.130	18.133	0				
	74	Bromoform	10.553	5.5	168706	0.378	0.358	15.408	15.413	8.78				
	75	1,1,2,2-Tetrachloroethane	10.293	2.9	286147	0.641	0.623	15.676	15.677	6.26				
	76	4-Bromofluorobenzene	10.268	2.7	556889	1.247	1.215	15.795	15.800	8.15				
	77	1,2,3-Trichloropropane	10.430	4.3	73352	0.164	0.157	15.914	15.920	6.86				
	78	trans-1,4-Dichloro-2-butene	9.698	-3.0	77571	0.174	0.179	16.033	16.030	11.29				
	79	n-Propylbenzene	10.693	6.9	2797037	6.264	5.858	16.048	16.047	7.35				

SU
2/25/16

80	Bromobenzene	10.359	3.6	424130	0.950	0.917	16.108	16.118	6.79				
81	1,3,5-Trimethylbenzene	10.437	4.4	1580190	3.539	3.391	16.301	16.305	8.13				
82	2-Chlorotoluene	10.817	8.2	1696934	3.800	3.513	16.331	16.335	7.53				
83	4-Chlorotoluene	10.285	2.8	1328491	2.975	2.893	16.405	16.409	6.62				
84	tert-Butylbenzene	10.496	5.0	427042	0.956	0.911	16.881	16.885	7.29				
85	1,2,4-Trimethylbenzene	10.590	5.9	1542260	3.454	3.261	16.940	16.943	5.23				
86	sec-Butylbenzene	11.111	11.1	2287107	5.122	4.609	17.208	17.208	6.55				
87	p-Isopropyltoluene	10.602	6.0	1751078	3.921	3.699	17.402	17.406	7.32				
88	1,3-Dichlorobenzene	10.583	5.8	838212	1.877	1.774	17.535	17.540	6.19				
89	1,4-Dichlorobenzene	10.592	5.9	805183	1.803	1.702	17.684	17.688	6.71				
90	n-Butylbenzene	10.883	8.8	1745977	3.910	3.593	17.952	17.955	6.92				
91	1,2-Dichlorobenzene	10.615	6.1	692054	1.550	1.460	18.160	18.166	6.90				
92	1,2-Dibromo-3-chloropropane	10.282	2.8	40918	0.092	0.089	19.082	19.079	7.67				
93	1,2,4-Trichlorobenzene	10.557	5.6	422800	0.947	0.897	20.049	20.050	9.57				
94	Hexachlorobutadiene	11.073	10.7	278900	0.625	0.564	20.198	20.201	8.29				
95	Naphthalene	10.424	4.2	612881	1.372	1.317	20.361	20.358	8.09				
96	1,2,3-Trichlorobenzene	10.325	3.3	318696	0.714	0.691	20.644	20.647	8.56				

Spike Amount = Nominal Amount * M

SW
2/25/16

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	84	0.00
2	T,M	Dichlorodifluoromethane	10.000	10.488	-4.9	87	-0.01
3	P,T,M	Chloromethane	10.000	11.215	-12.1	91	0.00
4	C,T,M	Vinyl chloride	10.000	11.108	-11.1	91	-0.01
5	T,M	Bromomethane	10.000	10.815	-8.1	89	0.00
6	T,M	Chloroethane	10.000	10.492	-4.9	86	0.00
7	T,M	Dichlorofluoromethane	10.000	10.697	-7.0	86	0.00
8	T,M	Trichlorofluoromethane	10.000	10.510	-5.1	88	0.00
9	T,M	Acrolein	50.000	52.714	-5.4	89	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	11.267	-12.7	89	0.00
11	T,M	Acetone	50.000	54.620	-9.2	85	0.00
12	C,T,M	1,1-Dichloroethene	10.000	10.754	-7.5	87	0.00
13	T,M	tert-Butyl alcohol	50.000	51.031	-2.1	85	0.00
14	T,M	Acetonitrile	-1.000	0.000	0.0	0	0.00
15	T,M	Methyl acetate	10.000	10.660	-6.6	85	0.00
16	T,M	Iodomethane	10.000	10.812	-8.1	87	-0.01
17	T,M	Methylene chloride	10.000	10.654	-6.5	88	0.00
18	T,M	Carbon disulfide	10.000	10.340	-3.4	87	0.00
19	T,M	Acrylonitrile	50.000	51.660	-3.3	85	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	10.162	-1.6	83	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	10.685	-6.9	88	-0.01
22	T,M	Isopropyl ether (DIPE)	10.000	10.655	-6.5	86	0.02
23	T,M	Vinyl acetate	10.000	10.984	-9.8	86	0.00
24	P,T,M	1,1-Dichloroethane	10.000	10.614	-6.1	86	0.00
25	T,M	2-Butanol	50.000	51.673	-3.3	81	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	10.765	-7.7	87	0.00
27	T,M	2-Butanone	50.000	50.682	-1.4	83	-0.01
28	T,M	2,2-Dichloropropane	10.000	9.980	0.2	81	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	10.544	-5.4	87	0.00
30	C,T,M	Chloroform	10.000	10.506	-5.1	88	0.00
31	T,M	tert-Amyl alcohol	-1.000	0.000	0.0	0	0.00
32	T,M	Bromochloromethane	10.000	10.870	-8.7	83	0.00
33	T,M	Tetrahydrofuran	10.000	10.187	-1.9	83	-0.01
34	S	Dibromofluoromethane	10.000	10.526	-5.3	88	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.478	-4.8	87	0.00
36	T,M	Cyclohexane	10.000	10.853	-8.5	91	0.00
37	T,M	2,2,4-Trimethylpentane	-1.000	0.000	0.0	0	0.00
38	T,M	1,1-Dichloropropene	10.000	10.848	-8.5	87	0.00
39	T,M	Carbon tetrachloride	10.000	10.708	-7.1	87	0.00
40	T,M	tert-Amyl methyl ether (TAM	10.000	9.976	0.2	84	-0.01
41	S	1,2-Dichloroethane-d4	10.000	10.299	-3.0	87	0.00

(#) = Out of Range

SW 2/25/16

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.738	-7.4	84	0.00
43	T,M	Benzene	10.000	10.640	-6.4	87	0.00
44	T,M	Trichloroethene	10.000	10.796	-8.0	86	0.00
45	T,M	Methylcyclohexane	10.000	10.652	-6.5	89	0.00
46	C,T,M	1,2-Dichloropropane	10.000	10.543	-5.4	85	0.00
47	T,M	1,4-Dioxane	200.000	207.080	-3.5	85	0.00
48	T,M	Bromodichloromethane	10.000	10.564	-5.6	86	-0.01
49	T,M	Dibromomethane	10.000	10.774	-7.7	85	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	10.182	-1.8	81	0.00
51	T,M	4-Methyl-2-pentanone	50.000	55.151	-10.3	86	0.00
52	T,M	cis-1,3-Dichloropropene	10.000	10.538	-5.4	82	0.00
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	86	0.00
54	S	Toluene-d8	10.000	10.581	-5.8	89	0.00
55	C,T,M	Toluene	10.000	10.465	-4.6	87	0.00
56	T,M	Ethyl methacrylate	10.000	10.817	-8.2	82	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	10.309	-3.1	82	0.00
58	T,M	1,1,2-Trichloroethane	10.000	10.262	-2.6	83	0.00
59	T,M	2-Hexanone	50.000	55.842	-11.7	86	0.00
60	T,M	1,3-Dichloropropane	10.000	10.599	-6.0	86	0.00
61	T,M	Tetrachloroethene	10.000	10.684	-6.8	85	0.00
62	T,M	Dibromochloromethane	10.000	10.867	-8.7	86	0.00
63	T,M	2-Ethyl-1-butanol	-1.000	0.000	0.0	0	0.00
64	T,M	1,2-Dibromoethane	10.000	10.644	-6.4	85	0.00
65	T,M	1-Chlorohexane	10.000	10.905	-9.0	87	-0.01
66	P, T,M	Chlorobenzene	10.000	10.761	-7.6	85	-0.01
67	T,M	1,1,1,2-Tetrachloroethane	10.000	10.610	-6.1	84	-0.01
68	C,T,M	Ethylbenzene	10.000	10.952	-9.5	85	-0.01
69	T,M	m-Xylene & p-Xylene	20.000	21.674	-8.4	86	0.00
70	T,M	o-Xylene	10.000	10.664	-6.6	84	0.00
71	T,M	Styrene	10.000	10.649	-6.5	84	-0.01
72	T,M	Isopropylbenzene	10.000	11.077	-10.8	87	0.00
73	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	83	0.00
74	P,T,M	Bromoform	10.000	10.553	-5.5	82	0.00
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.293	-2.9	83	0.00
76	S	4-Bromofluorobenzene	10.000	10.268	-2.7	89	0.00
77	T,M	1,2,3-Trichloropropane	10.000	10.430	-4.3	84	0.00
78	T,M	trans-1,4-Dichloro-2-butene	10.000	9.698	3.0	83	0.00
79	T,M	n-Propylbenzene	10.000	10.693	-6.9	87	0.00
80	T,M	Bromobenzene	10.000	10.359	-3.6	84	-0.01

(#) = Out of Range

Sw 2/25/16

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	10.437	-4.4	87	0.00
82	T,M	2-Chlorotoluene	10.000	10.817	-8.2	89	0.00
83	T,M	4-Chlorotoluene	10.000	10.284	-2.8	85	0.00
84	T,M	tert-Butylbenzene	10.000	10.496	-5.0	85	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	10.590	-5.9	86	0.00
86	T,M	sec-Butylbenzene	10.000	11.112	-11.1	87	0.00
87	T,M	p-Isopropyltoluene	10.000	10.602	-6.0	86	0.00
88	T,M	1,3-Dichlorobenzene	10.000	10.583	-5.8	87	0.00
89	T,M	1,4-Dichlorobenzene	10.000	10.592	-5.9	84	0.00
90	T,M	n-Butylbenzene	10.000	10.883	-8.8	87	0.00
91	T,M	1,2-Dichlorobenzene	10.000	10.615	-6.2	84	0.00
92	T,M	1,2-Dibromo-3-chloropropane	10.000	10.282	-2.8	83	0.00
93	T,M	1,2,4-Trichlorobenzene	10.000	10.557	-5.6	84	0.00
94	T,M	Hexachlorobutadiene	10.000	11.073	-10.7	87	0.00
95	T,M	Naphthalene	10.000	10.424	-4.2	84	0.00
96	T,M	1,2,3-Trichlorobenzene	10.000	10.325	-3.2	81	0.00

SU
2/25/16

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

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	84	0.00
2	T,M	Dichlorodifluoromethane	0.390	0.410	-5.1	87	-0.01
3	P,T,M	Chloromethane	0.424	0.476	-12.3	91	0.00
4	C,T,M	Vinyl chloride	0.390	0.433	-11.0	91	-0.01
5	T,M	Bromomethane	0.257	0.278	-8.2	89	0.00
6	T,M	Chloroethane	0.231	0.242	-4.8	86	0.00
7	T,M	Dichlorofluoromethane	0.607	0.649	-6.9	86	0.00
8	T,M	Trichlorofluoromethane	0.392	0.412	-5.1	88	0.00
9	T,M	Acrolein	0.016	0.017	-6.3	89	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	0.194	0.219	-12.9	89	0.00
11	T,M	Acetone	0.027	0.027	0.0	85	0.00
12	C,T,M	1,1-Dichloroethene	0.517	0.556	-7.5	87	0.00
13	T,M	tert-Butyl alcohol	0.010	0.010	0.0	85	0.00
14	T,M	Acetonitrile	0.000	0.000	0.0	0#	0.00
15	T,M	Methyl acetate	0.114	0.106	7.0	85	0.00
16	T,M	Iodomethane	0.503	0.543	-8.0	87	-0.01
17	T,M	Methylene chloride	0.367	0.391	-6.5	88	0.00
18	T,M	Carbon disulfide	1.211	1.253	-3.5	87	0.00
19	T,M	Acrylonitrile	0.043	0.044	-2.3	85	0.00
20	T,M	tert-Butyl methyl ether (MT	0.460	0.467	-1.5	83	0.00
21	T,M	trans-1,2-Dichloroethene	0.468	0.500	-6.8	88	-0.01
22	T,M	Isopropyl ether (DIPE)	0.985	1.050	-6.6	86	0.02
23	T,M	Vinyl acetate	0.292	0.321	-9.9	86	0.00
24	P,T,M	1,1-Dichloroethane	0.571	0.606	-6.1	86	0.00
25	T,M	2-Butanol	0.009	0.009	0.0	81	0.00
26	T,M	tert-Butyl ethyl ether (ETB	0.737	0.793	-7.6	87	0.00
27	T,M	2-Butanone	0.013	0.013	0.0	83	-0.01
28	T,M	2,2-Dichloropropane	0.267	0.266	0.4	81	0.00
29	T,M	cis-1,2-Dichloroethene	0.347	0.365	-5.2	87	0.00
30	C,T,M	Chloroform	0.508	0.533	-4.9	88	0.00
31	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	0.00
32	T,M	Bromochloromethane	0.222	0.242	-9.0	83	0.00
33	T,M	Tetrahydrofuran	0.033	0.033	0.0	83	-0.01
34	S	Dibromofluoromethane	0.284	0.299	-5.3	88	0.00
35	T,M	1,1,1-Trichloroethane	0.380	0.398	-4.7	87	0.00
36	T,M	Cyclohexane	0.633	0.687	-8.5	91	0.00
37	T,M	2,2,4-Trimethylpentane	0.000	0.000	0.0	0#	0.00
38	T,M	1,1-Dichloropropene	0.168	0.183	-8.9	87	0.00
39	T,M	Carbon tetrachloride	0.349	0.373	-6.9	87	0.00
40	T,M	tert-Amyl methyl ether (TAM	0.127	0.127	0.0	84	-0.01
41	S	1,2-Dichloroethane-d4	0.207	0.214	-3.4	87	0.00

(#) = Out of Range

SU 2/25/16

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Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.241	0.259	-7.5	84	0.00
43	T,M	Benzene	1.279	1.361	-6.4	87	0.00
44	T,M	Trichloroethene	0.352	0.380	-8.0	86	0.00
45	T,M	Methylcyclohexane	0.564	0.600	-6.4	89	0.00
46	C,T,M	1,2-Dichloropropane	0.315	0.333	-5.7	85	0.00
47	T,M	1,4-Dioxane	0.001	0.001	0.0	85	0.00
48	T,M	Bromodichloromethane	0.352	0.372	-5.7	86	-0.01
49	T,M	Dibromomethane	0.128	0.138	-7.8	85	0.00
50	T,M	2-Chloroethyl vinyl ether	0.070	0.071	-1.4	81	0.00
51	T,M	4-Methyl-2-pentanone	0.130	0.144	-10.8	86	0.00
52	T,M	cis-1,3-Dichloropropene	0.438	0.461	-5.3	82	0.00
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	0.00
54	S	Toluene-d8	1.309	1.385	-5.8	89	0.00
55	C,T,M	Toluene	1.572	1.645	-4.6	87	0.00
56	T,M	Ethyl methacrylate	0.244	0.264	-8.2	82	0.00
57	T,M	trans-1,3-Dichloropropene	0.374	0.385	-2.9	82	0.00
58	T,M	1,1,2-Trichloroethane	0.205	0.210	-2.4	83	0.00
59	T,M	2-Hexanone	0.091	0.102	-12.1	86	0.00
60	T,M	1,3-Dichloropropane	0.371	0.394	-6.2	86	0.00
61	T,M	Tetrachloroethene	0.305	0.326	-6.9	85	0.00
62	T,M	Dibromochloromethane	0.252	0.274	-8.7	86	0.00
63	T,M	2-Ethyl-1-butanol	0.000	0.000	0.0	0#	0.00
64	T,M	1,2-Dibromoethane	0.197	0.210	-6.6	85	0.00
65	T,M	1-Chlorohexane	0.666	0.727	-9.2	87	-0.01
66	P, T,M	Chlorobenzene	0.921	0.991	-7.6	85	-0.01
67	T,M	1,1,1,2-Tetrachloroethane	0.299	0.317	-6.0	84	-0.01
68	C,T,M	Ethylbenzene	1.664	1.822	-9.5	85	-0.01
69	T,M	m-Xylene & p-Xylene	1.207	1.308	-8.4	86	0.00
70	T,M	o-Xylene	1.248	1.331	-6.7	84	0.00
71	T,M	Styrene	0.964	1.027	-6.5	84	-0.01
72	T,M	Isopropylbenzene	1.465	1.622	-10.7	87	0.00
73	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	83	0.00
74	P,T,M	Bromoform	0.358	0.378	-5.6	82	0.00
75	P,T,M	1,1,2,2-Tetrachloroethane	0.623	0.641	-2.9	83	0.00
76	S	4-Bromofluorobenzene	1.215	1.247	-2.6	89	0.00
77	T,M	1,2,3-Trichloropropane	0.157	0.164	-4.5	84	0.00
78	T,M	trans-1,4-Dichloro-2-butene	0.179	0.174	2.8	83	0.00
79	T,M	n-Propylbenzene	5.858	6.264	-6.9	87	0.00
80	T,M	Bromobenzene	0.917	0.950	-3.6	84	-0.01

(#) = Out of Range

SW 2/25/16

265

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.391	3.539	-4.4	87	0.00
82	T,M	2-Chlorotoluene	3.513	3.800	-8.2	89	0.00
83	T,M	4-Chlorotoluene	2.893	2.975	-2.8	85	0.00
84	T,M	tert-Butylbenzene	0.911	0.956	-4.9	85	0.00
85	T,M	1,2,4-Trimethylbenzene	3.261	3.454	-5.9	86	0.00
86	T,M	sec-Butylbenzene	4.609	5.122	-11.1	87	0.00
87	T,M	p-Isopropyltoluene	3.699	3.921	-6.0	86	0.00
88	T,M	1,3-Dichlorobenzene	1.774	1.877	-5.8	87	0.00
89	T,M	1,4-Dichlorobenzene	1.702	1.803	-5.9	84	0.00
90	T,M	n-Butylbenzene	3.593	3.910	-8.8	87	0.00
91	T,M	1,2-Dichlorobenzene	1.460	1.550	-6.2	84	0.00
92	T,M	1,2-Dibromo-3-chloropropane	0.089	0.092	-3.4	83	0.00
93	T,M	1,2,4-Trichlorobenzene	0.897	0.947	-5.6	84	0.00
94	T,M	Hexachlorobutadiene	0.564	0.625	-10.8	87	0.00
95	T,M	Naphthalene	1.317	1.372	-4.2	84	0.00
96	T,M	1,2,3-Trichlorobenzene	0.691	0.714	-3.3	81	0.00

Su 2/ 25/16

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.91	114	1502345	10.00 ug/l	0.00
53) CHLOROBENZENE-D5	13.82	117	1283994	10.00 ug/l	0.00
73) 1,2-DICHLOROBENZENE-D4	18.13	152	446545	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	7.41	111	448796	10.53 ug/l	0.00
Spiked Amount 10.000			Recovery = 105.30%		
41) 1,2-Dichloroethane-d4	8.24	65	320906	10.30 ug/l	0.00
Spiked Amount 10.000			Recovery = 103.00%		
54) Toluene-d8	11.38	98	1778913	10.58 ug/l	0.00
Spiked Amount 10.000			Recovery = 105.80%		
76) 4-Bromofluorobenzene	15.80	95	556889	10.27 ug/l	0.00
Spiked Amount 10.000			Recovery = 102.70%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.81	85	615234	10.49 ug/l	97
3) Chloromethane	2.05	50	714907	11.21 ug/l	100
4) Vinyl chloride	2.17	62	650496	11.11 ug/l	99
5) Bromomethane	2.68	94	417644	10.82 ug/l	100
6) Chloroethane	2.78	64	363584	10.49 ug/l	99
7) Dichlorofluoromethane	2.81	67	975326	10.70 ug/l	100
8) Trichlorofluoromethane	3.08	101	619706	10.51 ug/l	99
9) Acrolein	3.60	56	126738	52.71 ug/l	96
10) 1,1,2-Trichloro-1,2,2-trif	3.64	151	328671	11.27 ug/l	98
11) Acetone	3.69	43	203219	54.62 ug/l	100
12) 1,1-Dichloroethene	3.87	61	834858	10.75 ug/l	99
13) tert-Butyl alcohol	3.97	59	77022	51.03 ug/l	95
15) Methyl acetate	4.34	43	159923	10.66 ug/l	96
16) Iodomethane	4.28	142	816435	10.81 ug/l	99
17) Methylene chloride	4.55	49	587650	10.65 ug/l	99
18) Carbon disulfide	4.55	76	1881796	10.34 ug/l	99
19) Acrylonitrile	4.76	53	332407	51.66 ug/l	98
20) tert-Butyl methyl ether (M	4.80	73	701893	10.16 ug/l	100
21) trans-1,2-Dichloroethene	5.00	61	751874	10.68 ug/l	100
22) Isopropyl ether (DIPE)	5.56	45	1577169	10.66 ug/l	100
23) Vinyl acetate	5.76	43	481536	10.98 ug/l	100
24) 1,1-Dichloroethane	5.73	63	910652	10.61 ug/l	99
25) 2-Butanol	6.14	45	67250	51.67 ug/l	99
26) tert-Butyl ethyl ether (ET	6.28	59	1191898	10.76 ug/l	100
27) 2-Butanone	6.47	72	96898	50.68 ug/l	95
28) 2,2-Dichloropropane	6.69	77	399604	9.98 ug/l	99
29) cis-1,2-Dichloroethene	6.77	96	548929	10.54 ug/l	99

(#) = qualifier out of range (m) = manual integration
RBW413.D VO06B22.M Wed Feb 24 14:08:20 2016 SV 2/25/16 Page 1

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30) Chloroform	7.03	83	801278	10.51 ug/l	99
32) Bromochloromethane	7.30	49	362992	10.87 ug/l	99
33) Tetrahydrofuran	7.36	42	50179	10.19 ug/l	95
35) 1,1,1-Trichloroethane	7.70	97	597566	10.48 ug/l	100
36) Cyclohexane	7.72	56	1032493	10.85 ug/l	99
38) 1,1-Dichloropropene	7.97	110	274283	10.85 ug/l	100
39) Carbon tetrachloride	8.12	119	561099	10.71 ug/l	100
40) tert-Amyl methyl ether (TA	8.18	87	190873	9.98 ug/l	99
42) 1,2-Dichloroethane	8.40	62	388618	10.74 ug/l	97
43) Benzene	8.40	78	2044050	10.64 ug/l	100
44) Trichloroethene	9.43	130	570513	10.80 ug/l	98
45) Methylcyclohexane	9.50	83	901838	10.65 ug/l	98
46) 1,2-Dichloropropane	9.71	63	499544	10.54 ug/l	99
47) 1,4-Dioxane	10.14	88	38918	207.08 ug/l	87
48) Bromodichloromethane	10.08	83	558997	10.56 ug/l	99
49) Dibromomethane	10.17	93	207529	10.77 ug/l	98
50) 2-Chloroethyl vinyl ether	10.63	63	106685	10.18 ug/l	98
51) 4-Methyl-2-pentanone	10.66	43	1079140	55.15 ug/l	99
52) cis-1,3-Dichloropropene	10.99	75	692978	10.54 ug/l	100
55) Toluene	11.50	91	2112012	10.47 ug/l	100
56) Ethyl methacrylate	11.81	69	338412	10.82 ug/l	99
57) trans-1,3-Dichloropropene	11.81	75	494817	10.31 ug/l	99
58) 1,1,2-Trichloroethane	12.06	97	270059	10.26 ug/l	99
59) 2-Hexanone	12.09	43	655155	55.84 ug/l	100
60) 1,3-Dichloropropane	12.46	76	505476	10.60 ug/l	98
61) Tetrachloroethene	12.55	164	419014	10.68 ug/l	100
62) Dibromochloromethane	12.88	129	351454	10.87 ug/l	99
64) 1,2-Dibromoethane	13.21	107	269137	10.64 ug/l	99
65) 1-Chlorohexane	13.47	91	933227	10.90 ug/l	99
66) Chlorobenzene	13.88	112	1272519	10.76 ug/l	100
67) 1,1,1,2-Tetrachloroethane	13.95	131	407025	10.61 ug/l	99
68) Ethylbenzene	13.97	91	2339696	10.95 ug/l	100
69) m-Xylene & p-Xylene	14.10	91	3358757	21.67 ug/l	99
70) o-Xylene	14.80	91	1708681	10.66 ug/l	100
71) Styrene	14.86	104	1318639	10.65 ug/l	100
72) Isopropylbenzene	15.39	105	2083063	11.08 ug/l	99
74) Bromoform	15.41	173	168706	10.55 ug/l	99
75) 1,1,2,2-Tetrachloroethane	15.68	83	286147	10.29 ug/l	99
77) 1,2,3-Trichloropropane	15.91	110	73352	10.43 ug/l	93
78) trans-1,4-Dichloro-2-buten	16.03	53	77571	9.70 ug/l	97
79) n-Propylbenzene	16.05	91	2797037	10.69 ug/l	99

(#) = qualifier out of range (m) = manual integration
RBW413.D VO06B22.M Wed Feb 24 14:08:21 2016 SW 2/25/16 Page 2

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:36 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.11	156	424130	10.36 ug/l	100
81)	1,3,5-Trimethylbenzene	16.30	105	1580190	10.44 ug/l	99
82)	2-Chlorotoluene	16.33	91	1696934	10.82 ug/l	99
83)	4-Chlorotoluene	16.40	91	1328491	10.28 ug/l	99
84)	tert-Butylbenzene	16.88	134	427042	10.50 ug/l	98
85)	1,2,4-Trimethylbenzene	16.94	105	1542260	10.59 ug/l	100
86)	sec-Butylbenzene	17.21	105	2287107	11.11 ug/l	100
87)	p-Isopropyltoluene	17.40	119	1751078	10.60 ug/l	100
88)	1,3-Dichlorobenzene	17.54	146	838212	10.58 ug/l	99
89)	1,4-Dichlorobenzene	17.68	146	805183	10.59 ug/l	99
90)	n-Butylbenzene	17.95	91	1745977	10.88 ug/l	99
91)	1,2-Dichlorobenzene	18.16	146	692054	10.61 ug/l	99
92)	1,2-Dibromo-3-chloropropan	19.08	157	40918	10.28 ug/l	93
93)	1,2,4-Trichlorobenzene	20.05	180	422800	10.56 ug/l	100
94)	Hexachlorobutadiene	20.20	225	278900	11.07 ug/l	100
95)	Naphthalene	20.36	128	612881	10.42 ug/l	100
96)	1,2,3-Trichlorobenzene	20.64	180	318696	10.33 ug/l	98

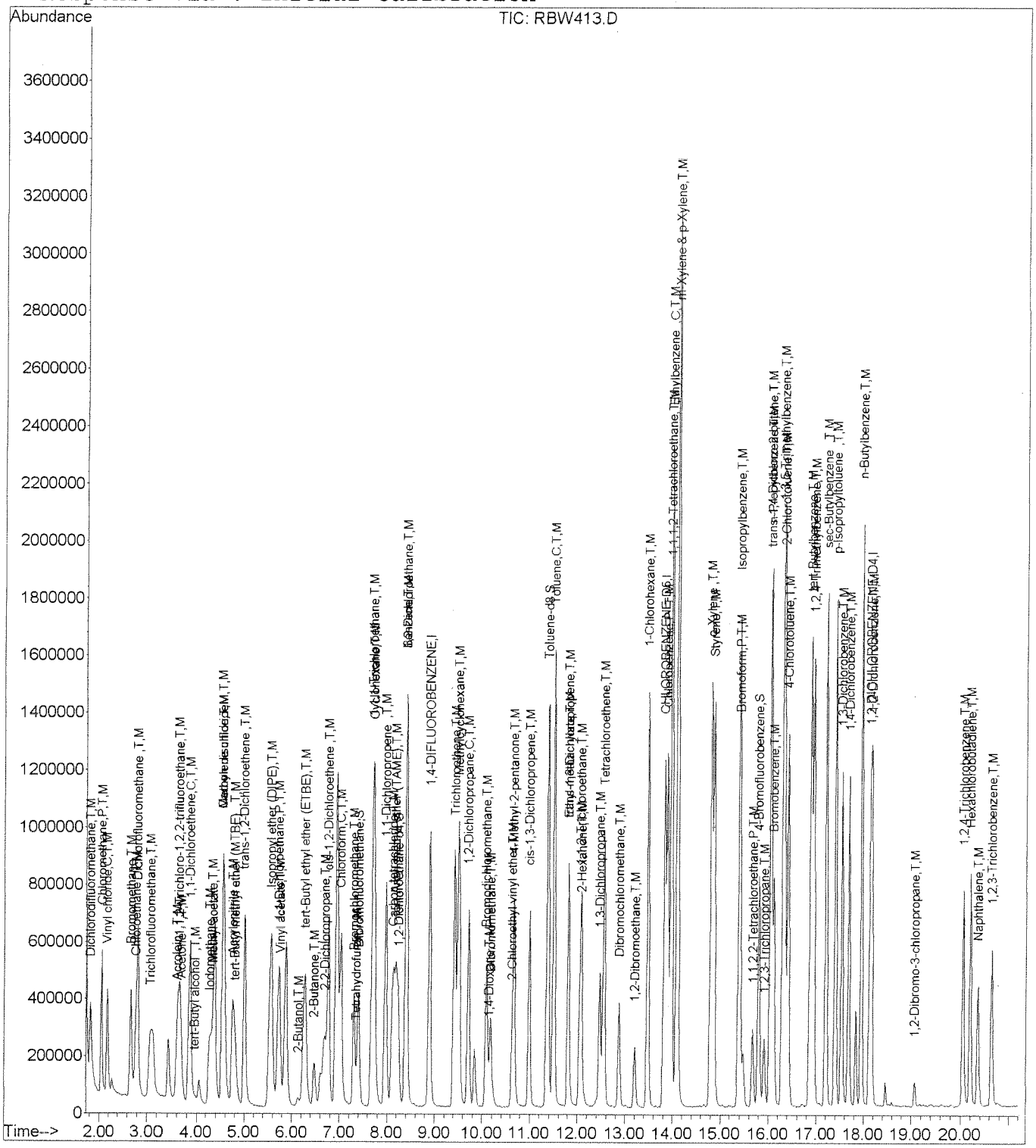
Su 2/25/16

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBW413.D Vial: 14
Acq On : 22 Feb 2016 8:09 pm Operator: ODinh
Sample : IVO06B2201 Inst : TO06
Misc : 10ppb 8260+3-ADD/50ppb KET-AA-TBA+2-But Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 16:36 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



SW 2/25/16

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DAILY CALIBRATIONS

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RBR214
Instrument ID: F3
GC Column: ZB-624 ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 02/17/16
BFB Injection Time : 12:15
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.96
75	30.0 - 60.0% of mass 95	40.67
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.11
173	Less than 2.0% of mass 174	0.41(0.6)1
174	Greater than 50% of mass 95	68.86
175	5.0 - 9.0% of mass 174	4.85(7.0)1
176	95.0 - 101.0% of mass 174	65.89(95.7)1
177	5.0 - 9.0% of mass 176	4.19(6.4)2

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

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	VSTD010	CVOF3A1917	RBR215	02/17/16	12:49
2	MBLK1W	VOF3B10B	RBR219	02/17/16	15:00
3	LCS1W	VOF3B10X	RBR220	02/17/16	15:28
4	LCD1W	VOF3B10Y	RBR221	02/17/16	15:56
5	TB-021016	B094-01N	RBR230	02/17/16	20:10

FORM V VOA OLM02.0

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8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX INC.
Lab Code : EMXT
Lab File ID : RAR090
Instrument ID: F3
GC Column : ZB-624 ID:0.25mm (mm)

Project : CANNON AFB PBR
SDG No. : 16B094
Date Analyzed : 01/19/16
Time Analyzed : 21:32
Heated Purge : No

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	2552086	12.96	1952108	16.49	540704	19.06
	UPPER LIMIT	5104172	13.46	3904216	16.99	1081408	19.56
	LOWER LIMIT	1276043	12.46	976054	15.99	270352	18.56
	SAMPLE ID						
1	VSTD010	2621371	12.98	1985163	16.50	540997	19.08
2	MBLK1W	1956774	12.99	1454399	16.50	369286	19.08
3	LCS1W	2185302	12.97	1631032	16.50	471043	19.08
4	LCD1W	1799790	12.97	1358510	16.50	408241	19.08
5	TB-021016	2082385	12.97	1462816	16.50	365154	19.08

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

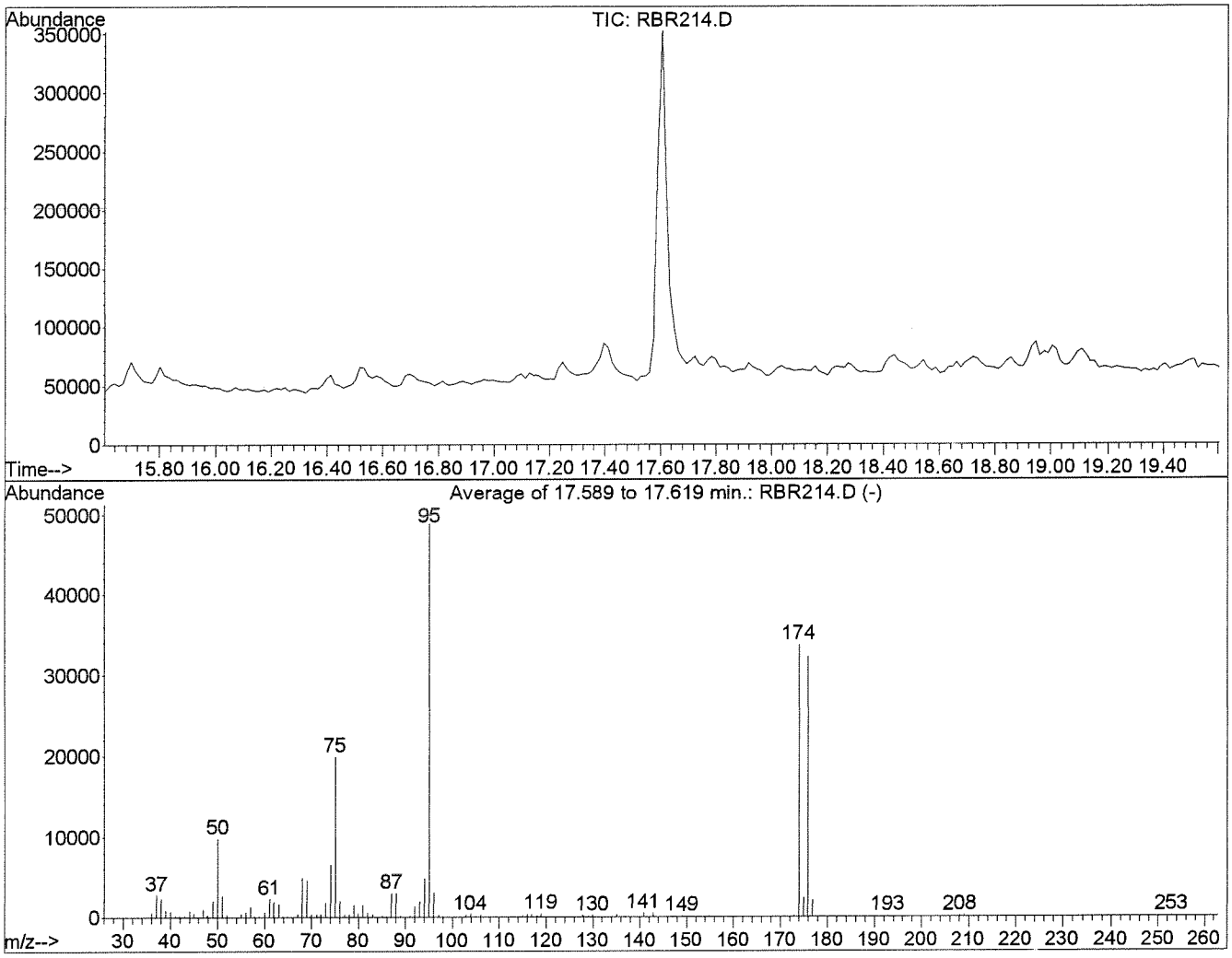
AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.5 minutes (30 sec) of internal standard RT
RT LOWER LIMIT = - 0.5 minutes (30 sec) of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

BFB

Data File : C:\HPCHEM\1\DATA\16B17\RBR214.D
Acq On : 17 Feb 2016 12:15 pm
Sample : BFBF3B10
Misc : T/CHK
MS Integration Params: 524INT.P
Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: IRagas/DNg
Inst : F3
Multiplr: 1.00



AutoFind: Scans 891, 892, 893; Background Corrected with Scan 886

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.0	9757	PASS
75	95	30	60	40.7	19877	PASS
95	95	100	100	100.0	48877	PASS
96	95	5	9	6.1	2984	PASS
173	174	0.00	2	0.6	198	PASS
174	95	50	100	68.9	33656	PASS
175	174	5	9	7.0	2369	PASS
176	174	95	101	95.7	32203	PASS
177	176	5	9	6.4	2048	PASS

RBR214.D VOF3A19.M Thu Feb 18 12:18:44 2016

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	103	0.03
2	T,M	Chlorotrifluoroethylene	10.000	0.696	93.0#	0	-4.43#
3	T,M	Dichlorodifluoromethane	10.000	10.419	-4.2	109	0.03
4	P,T,M	Chloromethane	10.000	11.995	-19.9	124	0.04
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-5.39#
6	C,T,M	Vinyl chloride	10.000	11.087	-10.9	115	0.03
7	T,M	Bromomethane	10.000	10.294	-2.9	105	0.04
8	T,M	Chloroethane	10.000	10.264	-2.6	110	0.04
9	T,M	Dichlorofluoromethane	10.000	9.376	6.2	102	0.04
10	T,M	Trichlorofluoromethane	10.000	11.927	-19.3	124	0.01
11	T,M	Acrolein	50.000	69.201	-38.4#	140	0.03
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.113	18.9	89	0.03
13	C,T,M	1,1-Dichloroethene	10.000	8.783	12.2	92	0.01
14	T,M	Acetone	50.000	50.899	-1.8	99	0.04
15	T,M	Iodomethane	10.000	8.275	17.2	88	0.01
16	T,M	Methyl acetate	10.000	0.000	100.0#	0	-8.31#
17	T,M	Carbon disulfide	10.000	10.534	-5.3	109	0.03
18	T,M	Methylene chloride	10.000	9.210	7.9	98	0.03
19	T,M	tert-Butyl alcohol	50.000	49.981	0.0	106	0.04
20	T,M	tert-Butyl methyl ether (MT	10.000	11.447	-14.5	113	0.04
21	T,M	trans-1,2-Dichloroethene	10.000	9.620	3.8	96	0.04
22	T,M	Acrylonitrile	50.000	52.564	-5.1	99	0.03
23	T,M	Isopropyl ether (DIPE)	10.000	10.256	-2.6	98	0.04
24	P,T,M	1,1-Dichloroethane	10.000	9.733	2.7	97	0.04
25	T,M	Vinyl acetate	10.000	10.575	-5.7	105	0.04
26	T,M	tert-Butyl ethyl ether (ETB	10.000	11.048	-10.5	110	0.04
27	T,M	2,2-Dichloropropane	10.000	10.952	-9.5	110	0.05
28	T,M	cis-1,2-Dichloroethene	10.000	9.955	0.4	100	0.04
29	T,M	2-Butanone	50.000	53.325	-6.7	97	0.04
30	T,M	2-Butanol	50.000	0.000	100.0#	0	-11.27#
31	T,M	Bromochloromethane	10.000	10.433	-4.3	104	0.03
32	T,M	Tetrahydrofuran	10.000	9.431	5.7	102	0.03
33	C,T,M	Chloroform	10.000	10.078	-0.8	99	0.03
34	S	Dibromofluoromethane	10.000	10.358	-3.6	102	0.03
35	T,M	1,1,1-Trichloroethane	10.000	10.459	-4.6	102	0.03
36	T,M	Cyclohexane	10.000	0.000	100.0#	0	-11.96#
37	T,M	1,1-Dichloropropene	10.000	9.978	0.2	99	0.03
38	T,M	Carbon tetrachloride	10.000	10.124	-1.2	98	0.04
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-12.33#
40	S	1,2-Dichloroethane-d4	10.000	9.472	5.3	94	0.03
41	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-12.43#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.727	2.7	99	0.05
43	T,M	1,2-Dichloroethane	10.000	9.825	1.8	97	0.03
44	T,M	tert-Amyl methyl ether (TAM	10.000	11.183	-11.8	114	0.03
45	T,M	Trichloroethene	10.000	9.797	2.0	100	0.03
46	T,M	Methylcyclohexane	10.000	0.000	100.0#	0	-13.58#
47	C,T,M	1,2-Dichloropropane	10.000	10.214	-2.1	100	0.03
48	T,M	1,4-Dioxane	200.000	216.475	-8.2	116	0.01
49	T,M	Dibromomethane	10.000	10.391	-3.9	102	0.01
50	T,M	Bromodichloromethane	10.000	10.163	-1.6	102	0.03
51	T,M	2-Chloroethyl vinyl ether	10.000	6.621	33.8#	68	0.03
52	T,M	cis-1,3-Dichloropropene	10.000	10.108	-1.1	98	0.03
53	T,M	4-Methyl-2-pentanone	50.000	47.346	5.3	89	0.03
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	102	0.01
55	S	Toluene-d8	10.000	9.563	4.4	93	0.03
56	C,T,M	Toluene	10.000	9.670	3.3	99	0.03
57	T,M	Ethyl methacrylate	10.000	9.534	4.7	95	0.01
58	T,M	trans-1,3-Dichloropropene	10.000	10.270	-2.7	99	0.01
59	T,M	1,1,2-Trichloroethane	10.000	10.922	-9.2	107	0.03
60	T,M	Tetrachloroethene	10.000	10.261	-2.6	101	0.03
61	T,M	2-Hexanone	50.000	47.645	4.7	90	0.02
62	T,M	1,3-Dichloropropane	10.000	10.481	-4.8	102	0.03
63	T,M	Dibromochloromethane	10.000	10.825	-8.2	108	0.01
64	T,M	1,2-Dibromoethane	10.000	10.877	-8.8	107	0.01
65	T,M	1-Chlorohexane	10.000	10.714	-7.1	104	0.03
66	P,M	Chlorobenzene	10.000	10.071	-0.7	101	0.01
67	C,T,M	Ethylbenzene	10.000	10.197	-2.0	99	0.01
68	T,M	1,1,1,2-Tetrachloroethane	10.000	10.543	-5.4	105	0.01
69	T,M	m-Xylene & p-Xylene	20.000	20.095	-0.5	96	0.03
70	T,M	o-Xylene	10.000	10.034	-0.3	100	0.02
71	T,M	Styrene	10.000	9.471	5.3	93	0.01
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	100	0.01
73	P,T,M	Bromoform	10.000	11.427	-14.3	109	0.01
74	T,M	Isopropylbenzene	10.000	10.114	-1.1	99	0.02
75	S	4-Bromofluorobenzene	10.000	10.232	-2.3	96	0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.756	-7.6	106	0.03
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.513	4.9	98	0.01
78	T,M	n-Propylbenzene	10.000	10.421	-4.2	98	0.03
79	T,M	1,2,3-Trichloropropane	10.000	11.392	-13.9	111	0.01
80	T,M	Bromobenzene	10.000	10.586	-5.9	104	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.862	1.4	95	0.03
82	T,M	2-Chlorotoluene	10.000	10.063	-0.6	98	0.01
83	T,M	4-Chlorotoluene	10.000	10.257	-2.6	97	0.01
84	T,M	tert-Butylbenzene	10.000	10.469	-4.7	105	0.03
85	T,M	1,2,4-Trimethylbenzene	10.000	9.759	2.4	92	0.01
86	T,M	sec-Butylbenzene	10.000	10.067	-0.7	97	0.01
87	T,M	p-Isopropyltoluene	10.000	10.193	-1.9	95	0.01
88	T,M	1,3-Dichlorobenzene	10.000	10.051	-0.5	99	0.01
89	T,M	1,4-Dichlorobenzene	10.000	9.872	1.3	95	0.01
90	T,M	Benzyl Chloride	10.000	10.130	-1.3	98	0.01
91	T,M	n-Butylbenzene	10.000	9.696	3.0	89	0.01
92	T,M	1,2-Dichlorobenzene	10.000	9.872	1.3	98	0.03
93	T,M	1,2-Dibromo-3-chloropropane	10.000	10.876	-8.8	104	0.01
94	T,M	1,2,4-Trichlorobenzene	10.000	9.529	4.7	92	0.03
95	T,M	Hexachlorobutadiene	10.000	10.447	-4.5	96	0.03
96	T,M	Naphthalene	10.000	8.702	13.0	89	0.03
97	T,M	1,2,3-Trichlorobenzene	10.000	9.757	2.4	95	0.03

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Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	103	0.03
2	T,M	Chlorotrifluoroethylene	0.156	0.000	100.0#	0#	-4.43#
3	T,M	Dichlorodifluoromethane	0.422	0.439	-4.0	109	0.03
4	P,T,M	Chloromethane	0.559	✓0.671	-20.0#	124	0.04
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.413	0.000	100.0#	0#	-5.39#
6	C,T,M	Vinyl chloride	0.468	0.519	-10.9	115	0.03
7	T,M	Bromomethane	0.288	0.297	-3.1	105	0.04
8	T,M	Chloroethane	0.274	0.281	-2.6	110	0.04
9	T,M	Dichlorofluoromethane	0.732	0.687	6.1	102	0.04
10	T,M	Trichlorofluoromethane	0.459	0.547	-19.2	124	0.01
11	T,M	Acrolein	0.011	0.016	-45.5#	140	0.03
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.212	0.172	18.9	89	0.03
13	C,T,M	1,1-Dichloroethene	0.628	0.551	12.3	92	0.01
14	T,M	Acetone	0.035	0.036	-2.9	99	0.04
15	T,M	Iodomethane	0.575	0.476	17.2	88	0.01
16	T,M	Methyl acetate	0.124	0.000	100.0#	0#	-8.31#
17	T,M	Carbon disulfide	1.240	1.306	-5.3	109	0.03
18	T,M	Methylene chloride	0.502	0.462	8.0	98	0.03
19	T,M	tert-Butyl alcohol	0.013	0.013	0.0	106	0.04
20	T,M	tert-Butyl methyl ether (MT	0.448	0.513	-14.5	113	0.04
21	T,M	trans-1,2-Dichloroethene	0.576	0.554	3.8	96	0.04
22	T,M	Acrylonitrile	0.046	0.049	-6.5	99	0.03
23	T,M	Isopropyl ether (DIPE)	1.225	1.256	-2.5	98	0.04
24	P,T,M	1,1-Dichloroethane	0.700	✓0.681	2.7	97	0.04
25	T,M	Vinyl acetate	0.030	0.032	-6.7	105	0.04
26	T,M	tert-Butyl ethyl ether (ETB	0.736	0.814	-10.6	110	0.04
27	T,M	2,2-Dichloropropane	0.326	0.357	-9.5	110	0.05
28	T,M	cis-1,2-Dichloroethene	0.382	0.380	0.5	100	0.04
29	T,M	2-Butanone	0.059	0.063	-6.8	97	0.04
30	T,M	2-Butanol	0.011	0.000	100.0#	0#	-11.27#
31	T,M	Bromochloromethane	0.135	0.141	-4.4	104	0.03
32	T,M	Tetrahydrofuran	0.046	0.043	6.5	102	0.03
33	C,T,M	Chloroform	0.590	0.595	-0.8	99	0.03
34	S	Dibromofluoromethane	0.326	0.338	-3.7	102	0.03
35	T,M	1,1,1-Trichloroethane	0.445	0.465	-4.5	102	0.03
36	T,M	Cyclohexane	0.763	0.000	100.0#	0#	-11.96#
37	T,M	1,1-Dichloropropene	0.179	0.179	0.0	99	0.03
38	T,M	Carbon tetrachloride	0.405	0.410	-1.2	98	0.04
39	T,M	tert-Amyl alcohol	0.008	0.000	100.0#	0#	-12.33#
40	S	1,2-Dichloroethane-d4	0.213	0.202	5.2	94	0.03
41	T,M	2,2,4-Trimethylpentane	1.242	0.000	100.0#	0#	-12.43#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.346	1.310	2.7	99	0.05
43	T,M	1,2-Dichloroethane	0.274	0.269	1.8	97	0.03
44	T,M	tert-Amyl methyl ether (TAM	0.105	0.118	-12.4	114	0.03
45	T,M	Trichloroethene	0.367	0.360	1.9	100	0.03
46	T,M	Methylcyclohexane	0.530	0.000	100.0#	0#	-13.58#
47	C,T,M	1,2-Dichloropropane	0.331	0.338	-2.1	100	0.03
48	T,M	1,4-Dioxane	0.001	0.001	0.0	116	0.01
49	T,M	Dibromomethane	0.133	0.138	-3.8	102	0.01
50	T,M	Bromodichloromethane	0.396	0.403	-1.8	102	0.03
51	T,M	2-Chloroethyl vinyl ether	0.077	0.051	33.8#	68	0.03
52	T,M	cis-1,3-Dichloropropene	0.430	0.434	-0.9	98	0.03
53	T,M	4-Methyl-2-pentanone	0.138	0.130	5.8	89	0.03
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	102	0.01
55	S	Toluene-d8	1.397	1.336	4.4	93	0.03
56	C,T,M	Toluene	1.766	1.708	3.3	99	0.03
57	T,M	Ethyl methacrylate	0.260	0.248	4.6	95	0.01
58	T,M	trans-1,3-Dichloropropene	0.398	0.409	-2.8	99	0.01
59	T,M	1,1,2-Trichloroethane	0.216	0.236	-9.3	107	0.03
60	T,M	Tetrachloroethene	0.316	0.324	-2.5	101	0.03
61	T,M	2-Hexanone	0.113	0.108	4.4	90	0.02
62	T,M	1,3-Dichloropropane	0.397	0.416	-4.8	102	0.03
63	T,M	Dibromochloromethane	0.298	0.322	-8.1	108	0.01
64	T,M	1,2-Dibromoethane	0.220	0.240	-9.1	107	0.01
65	T,M	1-Chlorohexane	0.678	0.726	-7.1	104	0.03
66	P,M	Chlorobenzene	1.057	1.065	-0.8	101	0.01
67	C,T,M	Ethylbenzene	1.886	1.923	-2.0	99	0.01
68	T,M	1,1,1,2-Tetrachloroethane	0.331	0.349	-5.4	105	0.01
69	T,M	m-Xylene & p-Xylene	1.387	1.394	-0.5	96	0.03
70	T,M	o-Xylene	1.373	1.378	-0.4	100	0.02
71	T,M	Styrene	1.034	0.979	5.3	93	0.01
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	100	0.01
73	P,T,M	Bromoform	0.464	0.530	-14.2	109	0.01
74	T,M	Isopropylbenzene	6.530	6.605	-1.1	99	0.02
75	S	4-Bromofluorobenzene	1.441	1.474	-2.3	96	0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	0.836	0.899	-7.5	106	0.03
77	T,M	trans-1,4-Dichloro-2-butene	0.202	0.192	5.0	98	0.01
78	T,M	n-Propylbenzene	7.449	7.763	-4.2	98	0.03
79	T,M	1,2,3-Trichloropropane	0.198	0.226	-14.1	111	0.01
80	T,M	Bromobenzene	1.094	1.158	-5.9	104	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	4.761	4.696	1.4	95	0.03
82	T,M	2-Chlorotoluene	4.574	4.603	-0.6	98	0.01
83	T,M	4-Chlorotoluene	3.878	3.978	-2.6	97	0.01
84	T,M	tert-Butylbenzene	0.996	1.043	-4.7	105	0.03
85	T,M	1,2,4-Trimethylbenzene	4.413	4.306	2.4	92	0.01
86	T,M	sec-Butylbenzene	6.422	6.465	-0.7	97	0.01
87	T,M	p-Isopropyltoluene	4.637	4.727	-1.9	95	0.01
88	T,M	1,3-Dichlorobenzene	2.035	2.045	-0.5	99	0.01
89	T,M	1,4-Dichlorobenzene	1.946	1.921	1.3	95	0.01
90	T,M	Benzyl Chloride	1.003	1.016	-1.3	98	0.01
91	T,M	n-Butylbenzene	4.133	4.007	3.0	89	0.01
92	T,M	1,2-Dichlorobenzene	1.680	1.659	1.2	98	0.03
93	T,M	1,2-Dibromo-3-chloropropane	0.091	0.099	-8.8	104	0.01
94	T,M	1,2,4-Trichlorobenzene	0.810	0.772	4.7	92	0.03
95	T,M	Hexachlorobutadiene	0.575	0.601	-4.5	96	0.03
96	T,M	Naphthalene	1.259	1.095	13.0	89	0.03
97	T,M	1,2,3-Trichlorobenzene	0.632	0.617	2.4	95	0.03

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D
Acq On : 17 Feb 2016 12:49 pm
Sample : CVOF3A1917
Misc : 10ppb 8260/50ppb KET-AA-TBA
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:43 2016

Vial: 2
Operator: IRagas/DNguye
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	12.98	114	2621371	10.00 ug/l	0.03
54) CHLOROBENZENE-D5	16.50	117	1985163	10.00 ug/l	0.01
72) 1,2-DICHLOROBENZENE-D4	19.08	152	540997	10.00 ug/l	0.01
System Monitoring Compounds					
34) Dibromofluoromethane	11.88	111	885089	10.36 ug/l	0.03
Spiked Amount 10.000			Recovery	= 103.60%	
40) 1,2-Dichloroethane-d4	12.43	65	528908	9.47 ug/l	0.03
Spiked Amount 10.000			Recovery	= 94.70%	
55) Toluene-d8	14.91	98	2652837	9.56 ug/l	0.03
Spiked Amount 10.000			Recovery	= 95.60%	
75) 4-Bromofluorobenzene	17.59	95	797517	10.23 ug/l	0.01
Spiked Amount 10.000			Recovery	= 102.30%	

Target Compounds					Qvalue
3) Dichlorodifluoromethane	4.55	85	1151851	10.42 ug/l	99
4) Chloromethane	5.00	50	1758494	11.99 ug/l	100
6) Vinyl chloride	5.25	62	1359710	11.09 ug/l	98
7) Bromomethane	6.00	94	777750	10.29 ug/l	100
8) Chloroethane	6.19	64	736221	10.26 ug/l	99
9) Dichlorofluoromethane	6.55	67	1800311	9.38 ug/l	99
10) Trichlorofluoromethane	6.62	101	1433844	11.93 ug/l	99
11) Acrolein	7.49	56	208353	69.20 ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.59	151	451245	8.11 ug/l	99
13) 1,1-Dichloroethene	7.67	61	1444756	8.78 ug/l	98
14) Acetone	7.77	43	467716	50.90 ug/l	98
15) Iodomethane	8.05	142	1247662	8.27 ug/l	99
17) Carbon disulfide	8.20	76	3423024	10.53 ug/l	100
18) Methylene chloride	8.62	49	1212110	9.21 ug/l	97
19) tert-Butyl alcohol	8.72	59	164980	49.98 ug/l #	36
20) tert-Butyl methyl ether (M	9.04	73	1344514	11.45 ug/l	100
21) trans-1,2-Dichloroethene	9.14	61	1452929	9.62 ug/l	98
22) Acrylonitrile	9.13	53	637526	52.56 ug/l	99
23) Isopropyl ether (DIPE)	9.92	45	3293588	10.26 ug/l	98
24) 1,1-Dichloroethane	10.01	63	1785862	9.73 ug/l	100
25) Vinyl acetate	9.99	86	83734	10.58 ug/l #	78
26) tert-Butyl ethyl ether (ET	10.63	59	2132551	11.05 ug/l	100
27) 2,2-Dichloropropane	11.08	77	936202	10.95 ug/l	99
28) cis-1,2-Dichloroethene	11.11	96	996452	9.96 ug/l	99
29) 2-Butanone	11.08	43	825542	53.33 ug/l	98
31) Bromochloromethane	11.54	128	369868	10.43 ug/l	94
32) Tetrahydrofuran	11.58	42	113208	9.43 ug/l	95

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:43 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
33)	Chloroform	11.61	83	1558979	10.08 ug/l		99
35)	1,1,1-Trichloroethane	11.91	97	1219010	10.46 ug/l		99
37)	1,1-Dichloropropene	12.17	110	469260	9.98 ug/l		100
38)	Carbon tetrachloride	12.18	119	1075387	10.12 ug/l		99
42)	Benzene	12.51	78	3432942	9.73 ug/l		99
43)	1,2-Dichloroethane	12.55	62	705955	9.82 ug/l		100
44)	tert-Amyl methyl ether (TA	12.52	87	308985	11.18 ug/l	#	90
45)	Trichloroethene	13.39	130	943380	9.80 ug/l		98
47)	1,2-Dichloropropane	13.71	63	886293	10.21 ug/l		99
48)	1,4-Dioxane	13.86	88	60053	216.48 ug/l		91
49)	Dibromomethane	13.91	93	362703	10.39 ug/l		97
50)	Bromodichloromethane	14.07	83	1055993	10.16 ug/l		100
51)	2-Chloroethyl vinyl ether	14.36	63	133791	6.62 ug/l		96
52)	cis-1,3-Dichloropropene	14.59	75	1138818	10.11 ug/l		99
53)	4-Methyl-2-pentanone	14.71	43	1710254	47.35 ug/l		98
56)	Toluene	15.00	91	3390824	9.67 ug/l		100
57)	Ethyl methacrylate	15.22	69	491798	9.53 ug/l		97
58)	trans-1,3-Dichloropropene	15.23	75	811831	10.27 ug/l		98
59)	1,1,2-Trichloroethane	15.47	97	468647	10.92 ug/l		99
60)	Tetrachloroethene	15.62	164	643433	10.26 ug/l		99
61)	2-Hexanone	15.65	43	1067681	47.65 ug/l		99
62)	1,3-Dichloropropane	15.67	76	825291	10.48 ug/l		99
63)	Dibromochloromethane	15.93	129	639543	10.83 ug/l		99
64)	1,2-Dibromoethane	16.08	107	475765	10.88 ug/l		100
65)	1-Chlorohexane	16.40	91	1441599	10.71 ug/l		100
66)	Chlorobenzene	16.53	112	2113818	10.07 ug/l		97
67)	Ethylbenzene	16.57	91	3818148	10.20 ug/l		100
68)	1,1,1,2-Tetrachloroethane	16.59	131	693572	10.54 ug/l		99
69)	m-Xylene & p-Xylene	16.68	91	5534553	20.09 ug/l		100
70)	o-Xylene	17.07	91	2734872	10.03 ug/l		100
71)	Styrene	17.08	104	1943316	9.47 ug/l		99
73)	Bromoform	17.36	173	286773	11.43 ug/l		99
74)	Isopropylbenzene	17.38	105	3573169	10.11 ug/l		99
76)	1,1,2,2-Tetrachloroethane	17.71	83	486602	10.76 ug/l		98
77)	trans-1,4-Dichloro-2-buten	17.74	53	103840	9.51 ug/l		99
78)	n-Propylbenzene	17.77	91	4199832	10.42 ug/l		100
79)	1,2,3-Trichloropropane	17.77	110	122213	11.39 ug/l		94
80)	Bromobenzene	17.78	156	626697	10.59 ug/l		99
81)	1,3,5-Trimethylbenzene	17.90	105	2540265	9.86 ug/l		99
82)	2-Chlorotoluene	17.92	91	2490130	10.06 ug/l		100
83)	4-Chlorotoluene	18.00	91	2152016	10.26 ug/l		100

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguye
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:43 2016 Quant Results File: VOF3A19.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration
DataAcq Meth : VOF3A19

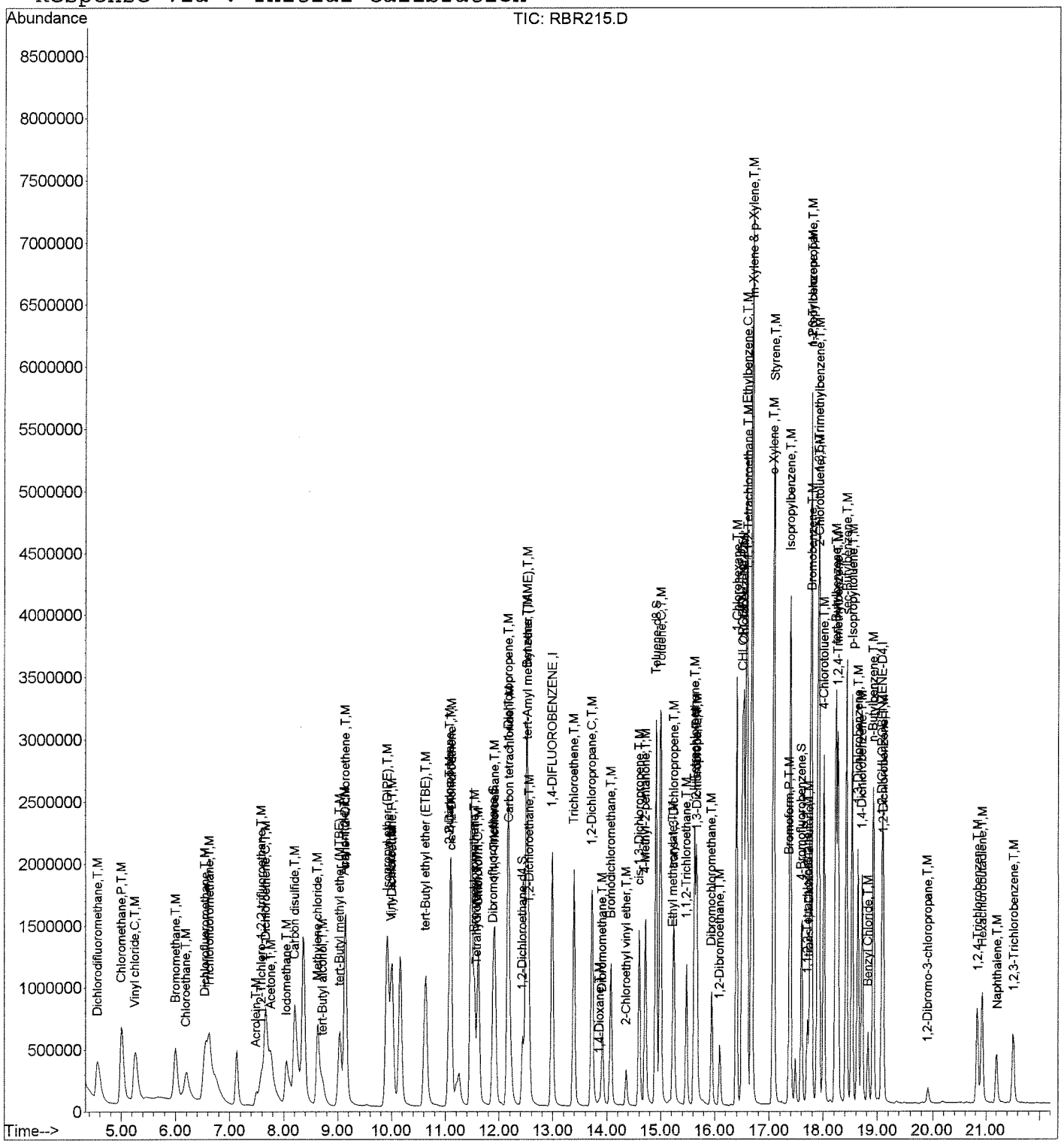
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
84)	tert-Butylbenzene	18.23	134	564056	10.47 ug/l	92
85)	1,2,4-Trimethylbenzene	18.26	105	2329601	9.76 ug/l	98
86)	sec-Butylbenzene	18.42	105	3497372	10.07 ug/l	99
87)	p-Isopropyltoluene	18.53	119	2557128	10.19 ug/l	100
88)	1,3-Dichlorobenzene	18.63	146	1106272	10.05 ug/l	100
89)	1,4-Dichlorobenzene	18.70	146	1039472	9.87 ug/l	99
90)	Benzyl Chloride	18.82	91	549856	10.13 ug/l	99
91)	n-Butylbenzene	18.91	91	2167828	9.70 ug/l	100
92)	1,2-Dichlorobenzene	19.11	146	897469	9.87 ug/l	99
93)	1,2-Dibromo-3-chloropropan	19.91	157	53543	10.88 ug/l	99
94)	1,2,4-Trichlorobenzene	20.83	180	417538	9.53 ug/l	100
95)	Hexachlorobutadiene	20.92	225	325266	10.45 ug/l	99
96)	Naphthalene	21.21	128	592483	8.70 ug/l	100
97)	1,2,3-Trichlorobenzene	21.52	180	333564	9.76 ug/l	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\16B17\RBR215.D Vial: 2
Acq On : 17 Feb 2016 12:49 pm Operator: IRagas/DNguy
Sample : CVOF3A1917 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Feb 18 15:43 2016 Quant Results File: VOF3A19.RES

Method : C:\HPCHEM\1\METHODS\VOF3A19.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Mon Jan 25 14:04:55 2016
Response via : Initial Calibration



5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RBW453
Instrument ID: 06
GC Column:RTX502.2ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 02/24/16
BFB Injection Time : 10:23
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.97
75	30.0 - 60.0% of mass 95	42.67
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.45
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	78.11
175	5.0 - 9.0% of mass 174	5.42(6.9)1
176	95.0 - 101.0% of mass 174	74.69(95.6)1
177	5.0 - 9.0% of mass 176	5.16(6.9)2

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

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	VSTD010	CV006B2202	RBW454	02/24/16	10:55
2	MBLK2W	V006B17B	RBW458	02/24/16	12:54
3	LCS2W	V006B17L	RBW455	02/24/16	11:38
4	LCD2W	V006B17C	RBW456	02/24/16	12:04
5	CAFB-IDW-W-022016	B094-03N	RBW467	02/24/16	16:54

FORM V VOA OLM02.0

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX INC.
Lab Code : EMXT
Lab File ID : RBW406
Instrument ID: 06
GC Column : RTX502.2ID:0.25mm (mm)

Project : CANNON AFB PBR
SDG No. : 16B094
Date Analyzed : 02/22/16
Time Analyzed : 17:12
Heated Purge : No

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	1779170	8.91	1492555	13.82	539866	18.13
	UPPER LIMIT	3558340	9.41	2985110	14.32	1079732	18.63
	LOWER LIMIT	889585	8.41	746278	13.32	269933	17.63
	SAMPLE ID						
1	VSTD010	1676310	8.88	1460584	13.80	502367	18.11
2	MBLK2W	1972770	8.89	1598963	13.80	513315	18.11
3	LCS2W	1711761	8.89	1460178	13.80	509366	18.11
4	LCD2W	1765866	8.89	1502437	13.80	492330	18.11
5	CAFB-IDW-W-022016	1784969	8.89	1496118	13.81	539958	18.12

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

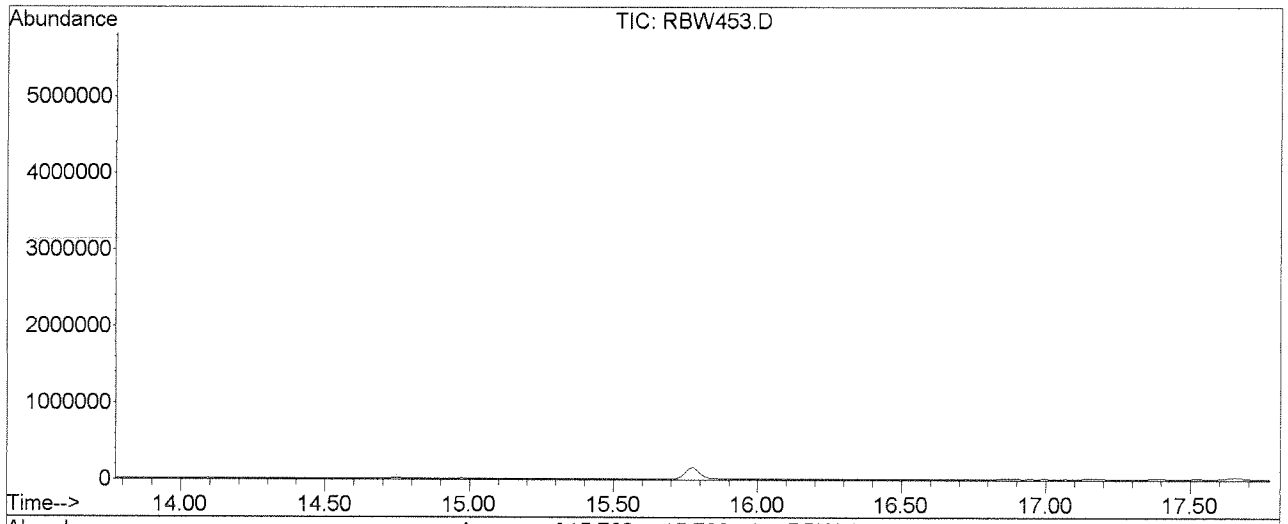
AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.5 minutes (30 sec) of internal standard RT
RT LOWER LIMIT = - 0.5 minutes (30 sec) of internal standard RT

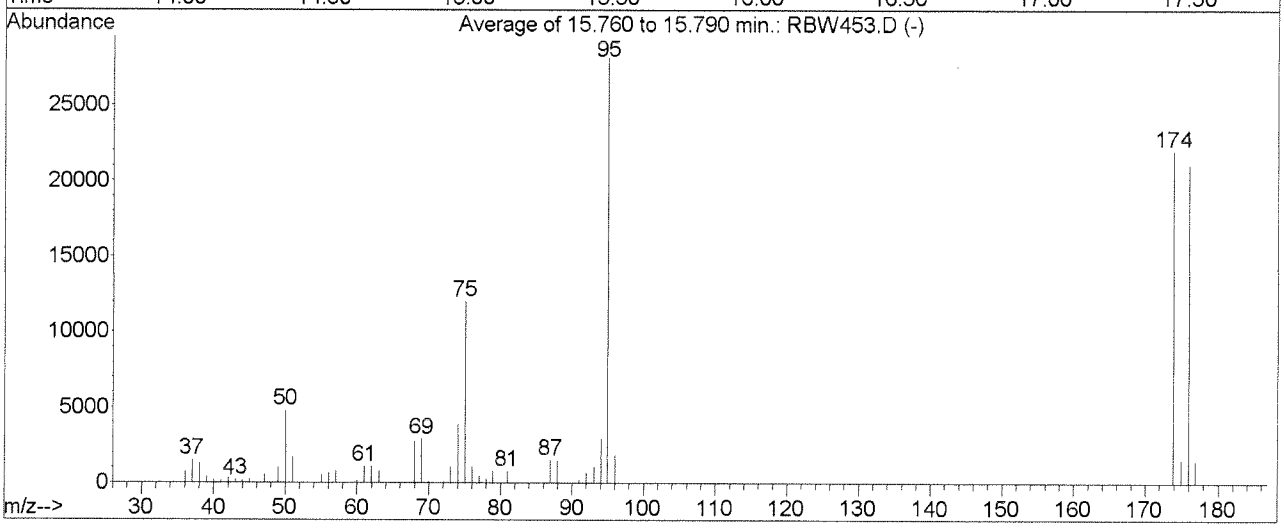
Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

BFB

Data File : D:\HPCHEM\1\DATA\16B24\RBW453.D
Acq On : 24 Feb 2016 10:23 am
Sample : BFB06B17
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260

Vial: 1
Operator: ODinh
Inst : TO06
Multiplr: 1.00





AutoFind: Scans 945, 946, 947; Background Corrected with Scan 940

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	4780	PASS
75	95	30	60	42.7	12016	PASS
95	95	100	100	100.0	28160	PASS
96	95	5	9	6.4	1816	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.1	21997	PASS
175	174	5	9	6.9	1527	PASS
176	174	95	101	95.6	21032	PASS
177	176	5	9	6.9	1452	PASS

RBW453.D VO06B22.M Thu Feb 25 10:41:41 2016

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	94	-0.03
2	T,M	Dichlorodifluoromethane	10.000	9.326	6.7	87	-0.03
3	P,T,M	Chloromethane	10.000	10.679	-6.8	97	-0.01
4	C,T,M	Vinyl chloride	10.000	10.108	-1.1	92	-0.03
5	T,M	Bromomethane	10.000	10.473	-4.7	96	-0.01
6	T,M	Chloroethane	10.000	10.592	-5.9	97	-0.01
7	T,M	Dichlorofluoromethane	10.000	11.234	-12.3	100	-0.01
8	T,M	Trichlorofluoromethane	10.000	10.393	-3.9	97	-0.01
9	T,M	Acrolein	50.000	50.918	-1.8	96	-0.01
10	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	11.923	-19.2	105	-0.01
11	T,M	Acetone	50.000	55.174	-10.3	96	-0.01
12	C,T,M	1,1-Dichloroethene	10.000	11.701	-17.0	106	-0.01
13	T,M	tert-Butyl alcohol	50.000	50.107	-0.2	93	-0.01
14	T,M	Acetonitrile	-1.000	0.000	0.0	0	0.00
15	T,M	Methyl acetate	10.000	10.348	-3.5	92	-0.01
16	T,M	Iodomethane	10.000	11.434	-14.3	103	-0.03
17	T,M	Methylene chloride	10.000	10.946	-9.5	101	-0.01
18	T,M	Carbon disulfide	10.000	9.290	7.1	87	-0.01
19	T,M	Acrylonitrile	50.000	52.716	-5.4	96	-0.01
20	T,M	tert-Butyl methyl ether (MT	10.000	10.323	-3.2	94	-0.01
21	T,M	trans-1,2-Dichloroethene	10.000	10.728	-7.3	98	-0.03
22	T,M	Isopropyl ether (DIPE)	10.000	11.595	-16.0	104	-0.01
23	T,M	Vinyl acetate	10.000	12.766	-27.7#	111	-0.01
24	P,T,M	1,1-Dichloroethane	10.000	10.847	-8.5	98	-0.03
25	T,M	2-Butanol	50.000	53.914	-7.8	94	-0.03
26	T,M	tert-Butyl ethyl ether (ETB	10.000	10.286	-2.9	92	-0.01
27	T,M	2-Butanone	50.000	50.126	-0.3	92	-0.03
28	T,M	2,2-Dichloropropane	10.000	10.408	-4.1	94	-0.03
29	T,M	cis-1,2-Dichloroethene	10.000	10.950	-9.5	101	-0.01
30	C,T,M	Chloroform	10.000	10.555	-5.5	99	-0.01
31	T,M	tert-Amyl alcohol	-1.000	0.000	0.0	0	0.00
32	T,M	Bromochloromethane	10.000	11.230	-12.3	96	-0.01
33	T,M	Tetrahydrofuran	10.000	10.633	-6.3	97	-0.03
34	S	Dibromofluoromethane	10.000	10.760	-7.6	100	-0.01
35	T,M	1,1,1-Trichloroethane	10.000	10.201	-2.0	94	-0.01
36	T,M	Cyclohexane	10.000	11.315	-13.1	106	-0.01
37	T,M	2,2,4-Trimethylpentane	-1.000	0.000	0.0	0	0.00
38	T,M	1,1-Dichloropropene	10.000	10.825	-8.2	97	-0.03
39	T,M	Carbon tetrachloride	10.000	10.480	-4.8	95	-0.03
40	T,M	tert-Amyl methyl ether (TAM	10.000	9.297	7.0	87	-0.03
41	S	1,2-Dichloroethane-d4	10.000	10.055	-0.5	95	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.691	-6.9	93	-0.03
43	T,M	Benzene	10.000	11.253	-12.5	102	-0.01
44	T,M	Trichloroethene	10.000	11.238	-12.4	100	-0.03
45	T,M	Methylcyclohexane	10.000	11.390	-13.9	106	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	11.041	-10.4	99	-0.01
47	T,M	1,4-Dioxane	200.000	202.548	-1.3	93	-0.03
48	T,M	Bromodichloromethane	10.000	10.736	-7.4	97	-0.03
49	T,M	Dibromomethane	10.000	10.787	-7.9	95	-0.01
50	T,M	2-Chloroethyl vinyl ether	10.000	7.508	24.9#	66	-0.03
51	T,M	4-Methyl-2-pentanone	50.000	54.492	-9.0	95	-0.01
52	T,M	cis-1,3-Dichloropropene	10.000	10.986	-9.9	96	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	98	-0.01
54	S	Toluene-d8	10.000	10.490	-4.9	100	-0.03
55	C,T,M	Toluene	10.000	10.442	-4.4	99	-0.01
56	T,M	Ethyl methacrylate	10.000	10.686	-6.9	92	-0.01
57	T,M	trans-1,3-Dichloropropene	10.000	10.229	-2.3	93	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	10.145	-1.4	94	-0.03
59	T,M	2-Hexanone	50.000	54.892	-9.8	96	-0.03
60	T,M	1,3-Dichloropropane	10.000	10.620	-6.2	98	-0.01
61	T,M	Tetrachloroethene	10.000	11.286	-12.9	103	-0.03
62	T,M	Dibromochloromethane	10.000	10.590	-5.9	95	-0.03
63	T,M	2-Ethyl-1-butanol	-1.000	0.000	0.0	0	0.00
64	T,M	1,2-Dibromoethane	10.000	10.276	-2.8	93	-0.03
65	T,M	1-Chlorohexane	10.000	11.430	-14.3	103	-0.03
66	P, T,M	Chlorobenzene	10.000	10.909	-9.1	98	-0.03
67	T,M	1,1,1,2-Tetrachloroethane	10.000	10.482	-4.8	95	-0.03
68	C,T,M	Ethylbenzene	10.000	11.317	-13.2	100	-0.03
69	T,M	m-Xylene & p-Xylene	20.000	22.742	-13.7	102	-0.03
70	T,M	o-Xylene	10.000	11.329	-13.3	102	-0.01
71	T,M	Styrene	10.000	10.944	-9.4	99	-0.03
72	T,M	Isopropylbenzene	10.000	11.194	-11.9	100	-0.03
73	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	93	-0.01
74	P,T,M	Bromoform	10.000	10.186	-1.9	90	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.339	-3.4	94	-0.03
76	S	4-Bromofluorobenzene	10.000	9.838	1.6	96	-0.01
77	T,M	1,2,3-Trichloropropane	10.000	10.084	-0.8	92	-0.03
78	T,M	trans-1,4-Dichloro-2-butene	10.000	8.937	10.6	86	-0.03
79	T,M	n-Propylbenzene	10.000	11.334	-13.3	104	-0.03
80	T,M	Bromobenzene	10.000	10.687	-6.9	98	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	10.952	-9.5	103	-0.03
82	T,M	2-Chlorotoluene	10.000	10.876	-8.8	101	-0.03
83	T,M	4-Chlorotoluene	10.000	11.132	-11.3	103	-0.03
84	T,M	tert-Butylbenzene	10.000	10.919	-9.2	100	-0.03
85	T,M	1,2,4-Trimethylbenzene	10.000	11.177	-11.8	102	-0.03
86	T,M	sec-Butylbenzene	10.000	11.399	-14.0	100	-0.03
87	T,M	p-Isopropyltoluene	10.000	11.324	-13.2	103	-0.01
88	T,M	1,3-Dichlorobenzene	10.000	11.122	-11.2	103	-0.01
89	T,M	1,4-Dichlorobenzene	10.000	11.209	-12.1	100	-0.01
90	T,M	n-Butylbenzene	10.000	11.837	-18.4	107	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	10.813	-8.1	96	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	10.134	-1.3	92	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	11.257	-12.6	101	-0.01
94	T,M	Hexachlorobutadiene	10.000	10.985	-9.8	97	-0.01
95	T,M	Naphthalene	10.000	10.172	-1.7	92	-0.03
96	T,M	1,2,3-Trichlorobenzene	10.000	10.645	-6.4	94	-0.01

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	94	-0.03
2	T,M	Dichlorodifluoromethane	0.390	0.364	6.7	87	-0.03
3	P,T,M	Chloromethane	0.424	0.453	-6.8	97	-0.01
4	C,T,M	Vinyl chloride	0.390	0.394	-1.0	92	-0.03
5	T,M	Bromomethane	0.257	0.269	-4.7	96	-0.01
6	T,M	Chloroethane	0.231	0.244	-5.6	97	-0.01
7	T,M	Dichlorofluoromethane	0.607	0.682	-12.4	100	-0.01
8	T,M	Trichlorofluoromethane	0.392	0.408	-4.1	97	-0.01
9	T,M	Acrolein	0.016	0.016	0.0	96	-0.01
10	T,M	1,1,2-Trichloro-1,2,2-trifl	0.194	0.232	-19.6	105	-0.01
11	T,M	Acetone	0.027	0.027	0.0	96	-0.01
12	C,T,M	1,1-Dichloroethene	0.517	0.605	-17.0	106	-0.01
13	T,M	tert-Butyl alcohol	0.010	0.010	0.0	93	-0.01
14	T,M	Acetonitrile	0.000	0.000	0.0	0#	0.00
15	T,M	Methyl acetate	0.114	0.104	8.8	92	-0.01
16	T,M	Iodomethane	0.503	0.575	-14.3	103	-0.03
17	T,M	Methylene chloride	0.367	0.402	-9.5	101	-0.01
18	T,M	Carbon disulfide	1.211	1.125	7.1	87	-0.01
19	T,M	Acrylonitrile	0.043	0.045	-4.7	96	-0.01
20	T,M	tert-Butyl methyl ether (MT	0.460	0.475	-3.3	94	-0.01
21	T,M	trans-1,2-Dichloroethene	0.468	0.502	-7.3	98	-0.03
22	T,M	Isopropyl ether (DIPE)	0.985	1.142	-15.9	104	-0.01
23	T,M	Vinyl acetate	0.292	0.373	-27.7#	111	-0.01
24	P,T,M	1,1-Dichloroethane	0.571	0.619	-8.4	98	-0.03
25	T,M	2-Butanol	0.009	0.009	0.0	94	-0.03
26	T,M	tert-Butyl ethyl ether (ETB	0.737	0.758	-2.8	92	-0.01
27	T,M	2-Butanone	0.013	0.013	0.0	92	-0.03
28	T,M	2,2-Dichloropropane	0.267	0.277	-3.7	94	-0.03
29	T,M	cis-1,2-Dichloroethene	0.347	0.379	-9.2	101	-0.01
30	C,T,M	Chloroform	0.508	0.536	-5.5	99	-0.01
31	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	0.00
32	T,M	Bromochloromethane	0.222	0.250	-12.6	96	-0.01
33	T,M	Tetrahydrofuran	0.033	0.035	-6.1	97	-0.03
34	S	Dibromofluoromethane	0.284	0.305	-7.4	100	-0.01
35	T,M	1,1,1-Trichloroethane	0.380	0.387	-1.8	94	-0.01
36	T,M	Cyclohexane	0.633	0.717	-13.3	106	-0.01
37	T,M	2,2,4-Trimethylpentane	0.000	0.000	0.0	0#	0.00
38	T,M	1,1-Dichloropropene	0.168	0.182	-8.3	97	-0.03
39	T,M	Carbon tetrachloride	0.349	0.366	-4.9	95	-0.03
40	T,M	tert-Amyl methyl ether (TAM	0.127	0.118	7.1	87	-0.03
41	S	1,2-Dichloroethane-d4	0.207	0.209	-1.0	95	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.241	0.258	-7.1	93	-0.03
43	T,M	Benzene	1.279	1.439	-12.5	102	-0.01
44	T,M	Trichloroethene	0.352	0.395	-12.2	100	-0.03
45	T,M	Methylcyclohexane	0.564	0.642	-13.8	106	-0.01
46	C,T,M	1,2-Dichloropropane	0.315	0.348	-10.5	99	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	93	-0.03
48	T,M	Bromodichloromethane	0.352	0.378	-7.4	97	-0.03
49	T,M	Dibromomethane	0.128	0.138	-7.8	95	-0.01
50	T,M	2-Chloroethyl vinyl ether	0.070	0.052	25.7#	66	-0.03
51	T,M	4-Methyl-2-pentanone	0.130	0.142	-9.2	95	-0.01
52	T,M	cis-1,3-Dichloropropene	0.438	0.481	-9.8	96	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	-0.01
54	S	Toluene-d8	1.309	1.374	-5.0	100	-0.03
55	C,T,M	Toluene	1.572	1.641	-4.4	99	-0.01
56	T,M	Ethyl methacrylate	0.244	0.260	-6.6	92	-0.01
57	T,M	trans-1,3-Dichloropropene	0.374	0.382	-2.1	93	-0.01
58	T,M	1,1,2-Trichloroethane	0.205	0.208	-1.5	94	-0.03
59	T,M	2-Hexanone	0.091	0.100	-9.9	96	-0.03
60	T,M	1,3-Dichloropropane	0.371	0.394	-6.2	98	-0.01
61	T,M	Tetrachloroethene	0.305	0.345	-13.1	103	-0.03
62	T,M	Dibromochloromethane	0.252	0.267	-6.0	95	-0.03
63	T,M	2-Ethyl-1-butanol	0.000	0.000	0.0	0#	0.00
64	T,M	1,2-Dibromoethane	0.197	0.202	-2.5	93	-0.03
65	T,M	1-Chlorohexane	0.666	0.762	-14.4	103	-0.03
66	P, T,M	Chlorobenzene	0.921	1.005	-9.1	98	-0.03
67	T,M	1,1,1,2-Tetrachloroethane	0.299	0.313	-4.7	95	-0.03
68	C,T,M	Ethylbenzene	1.664	1.883	-13.2	100	-0.03
69	T,M	m-Xylene & p-Xylene	1.207	1.372	-13.7	102	-0.03
70	T,M	o-Xylene	1.248	1.414	-13.3	102	-0.01
71	T,M	Styrene	0.964	1.055	-9.4	99	-0.03
72	T,M	Isopropylbenzene	1.465	1.640	-11.9	100	-0.03
73	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	93	-0.01
74	P,T,M	Bromoform	0.358	0.365	-2.0	90	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.623	0.644	-3.4	94	-0.03
76	S	4-Bromofluorobenzene	1.215	1.195	1.6	96	-0.01
77	T,M	1,2,3-Trichloropropane	0.157	0.159	-1.3	92	-0.03
78	T,M	trans-1,4-Dichloro-2-butene	0.179	0.160	10.6	86	-0.03
79	T,M	n-Propylbenzene	5.858	6.639	-13.3	104	-0.03
80	T,M	Bromobenzene	0.917	0.980	-6.9	98	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.391	3.713	-9.5	103	-0.03
82	T,M	2-Chlorotoluene	3.513	3.821	-8.8	101	-0.03
83	T,M	4-Chlorotoluene	2.893	3.220	-11.3	103	-0.03
84	T,M	tert-Butylbenzene	0.911	0.995	-9.2	100	-0.03
85	T,M	1,2,4-Trimethylbenzene	3.261	3.645	-11.8	102	-0.03
86	T,M	sec-Butylbenzene	4.609	5.254	-14.0	100	-0.03
87	T,M	p-Isopropyltoluene	3.699	4.188	-13.2	103	-0.01
88	T,M	1,3-Dichlorobenzene	1.774	1.973	-11.2	103	-0.01
89	T,M	1,4-Dichlorobenzene	1.702	1.908	-12.1	100	-0.01
90	T,M	n-Butylbenzene	3.593	4.253	-18.4	107	-0.01
91	T,M	1,2-Dichlorobenzene	1.460	1.579	-8.2	96	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.089	0.090	-1.1	92	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.897	1.010	-12.6	101	-0.01
94	T,M	Hexachlorobutadiene	0.564	0.620	-9.9	97	-0.01
95	T,M	Naphthalene	1.317	1.339	-1.7	92	-0.03
96	T,M	1,2,3-Trichlorobenzene	0.691	0.736	-6.5	94	-0.01

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:16 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	8.88	114	1676310	10.00	ug/l	-0.03
53) CHLOROBENZENE-D5	13.80	117	1460584	10.00	ug/l	-0.01
73) 1,2-DICHLOROBENZENE-D4	18.11	152	502367	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	7.39	111	511913	10.76	ug/l	-0.01
Spiked Amount 10.000			Recovery = 107.60%			
41) 1,2-Dichloroethane-d4	8.22	65	349600	10.06	ug/l	-0.01
Spiked Amount 10.000			Recovery = 100.60%			
54) Toluene-d8	11.35	98	2006127	10.49	ug/l	-0.03
Spiked Amount 10.000			Recovery = 104.90%			
76) 4-Bromofluorobenzene	15.78	95	600300	9.84	ug/l	-0.01
Spiked Amount 10.000			Recovery = 98.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.80	85	610382	9.33	ug/l	98
3) Chloromethane	2.04	50	759574	10.68	ug/l	99
4) Vinyl chloride	2.16	62	660522	10.11	ug/l	98
5) Bromomethane	2.66	94	451234	10.47	ug/l	100
6) Chloroethane	2.77	64	409550	10.59	ug/l	98
7) Dichlorofluoromethane	2.79	67	1142928	11.23	ug/l	99
8) Trichlorofluoromethane	3.06	101	683799	10.39	ug/l	100
9) Acrolein	3.58	56	136597	50.92	ug/l	99
10) 1,1,2-Trichloro-1,2,2-trif	3.63	151	388073	11.92	ug/l	99
11) Acetone	3.67	43	228896	55.17	ug/l	97
12) 1,1-Dichloroethene	3.85	61	1013508	11.70	ug/l	99
13) tert-Butyl alcohol	3.95	59	84384	50.11	ug/l	92
15) Methyl acetate	4.33	43	173698	10.35	ug/l	95
16) Iodomethane	4.27	142	963343	11.43	ug/l	99
17) Methylene chloride	4.54	49	673676	10.95	ug/l	99
18) Carbon disulfide	4.54	76	1886454	9.29	ug/l	99
19) Acrylonitrile	4.74	53	378482	52.72	ug/l	99
20) tert-Butyl methyl ether (M	4.79	73	795572	10.32	ug/l	99
21) trans-1,2-Dichloroethene	4.98	61	842341	10.73	ug/l	99
22) Isopropyl ether (DIPE)	5.53	45	1915083	11.60	ug/l	99
23) Vinyl acetate	5.74	43	624500	12.77	ug/l	98
24) 1,1-Dichloroethane	5.70	63	1038398	10.85	ug/l	99
25) 2-Butanol	6.11	45	78292	53.91	ug/l #	1
26) tert-Butyl ethyl ether (ET	6.26	59	1270731	10.29	ug/l	100
27) 2-Butanone	6.45	72	106932	50.13	ug/l #	86
28) 2,2-Dichloropropane	6.66	77	465007	10.41	ug/l	100
29) cis-1,2-Dichloroethene	6.75	96	636068	10.95	ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:16 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	Chloroform	7.02	83	898267	10.56 ug/l	99
32)	Bromochloromethane	7.29	49	418447	11.23 ug/l	99
33)	Tetrahydrofuran	7.35	42	58437	10.63 ug/l	94
35)	1,1,1-Trichloroethane	7.69	97	649144	10.20 ug/l	99
36)	Cyclohexane	7.70	56	1201143	11.32 ug/l	100
38)	1,1-Dichloropropene	7.94	110	305396	10.83 ug/l	99
39)	Carbon tetrachloride	8.09	119	612749	10.48 ug/l	99
40)	tert-Amyl methyl ether (TA	8.16	87	198472	9.30 ug/l	94
42)	1,2-Dichloroethane	8.37	62	431715	10.69 ug/l	97
43)	Benzene	8.39	78	2412093	11.25 ug/l	100
44)	Trichloroethene	9.40	130	662682	11.24 ug/l	97
45)	Methylcyclohexane	9.49	83	1075920	11.39 ug/l	99
46)	1,2-Dichloropropane	9.70	63	583700	11.04 ug/l	98
47)	1,4-Dioxane	10.11	88	42474	202.55 ug/l	96
48)	Bromodichloromethane	10.07	83	633849	10.74 ug/l	100
49)	Dibromomethane	10.16	93	231843	10.79 ug/l	98
50)	2-Chloroethyl vinyl ether	10.60	63	87774	7.51 ug/l	98
51)	4-Methyl-2-pentanone	10.65	43	1189711	54.49 ug/l	99
52)	cis-1,3-Dichloropropene	10.98	75	806083	10.99 ug/l	99
55)	Toluene	11.48	91	2397128	10.44 ug/l	100
56)	Ethyl methacrylate	11.79	69	380300	10.69 ug/l	98
57)	trans-1,3-Dichloropropene	11.79	75	558540	10.23 ug/l	99
58)	1,1,2-Trichloroethane	12.03	97	303699	10.14 ug/l	100
59)	2-Hexanone	12.06	43	732582	54.89 ug/l	100
60)	1,3-Dichloropropane	12.45	76	576135	10.62 ug/l	99
61)	Tetrachloroethene	12.52	164	503472	11.29 ug/l	99
62)	Dibromochloromethane	12.85	129	389625	10.59 ug/l	100
64)	1,2-Dibromoethane	13.18	107	295561	10.28 ug/l	99
65)	1-Chlorohexane	13.46	91	1112709	11.43 ug/l	100
66)	Chlorobenzene	13.86	112	1467389	10.91 ug/l	99
67)	1,1,1,2-Tetrachloroethane	13.94	131	457413	10.48 ug/l	99
68)	Ethylbenzene	13.95	91	2750071	11.32 ug/l	99
69)	m-Xylene & p-Xylene	14.07	91	4009053	22.74 ug/l	99
70)	o-Xylene	14.78	91	2064894	11.33 ug/l	99
71)	Styrene	14.84	104	1541549	10.94 ug/l	100
72)	Isopropylbenzene	15.36	105	2394750	11.19 ug/l	99
74)	Bromoform	15.39	173	183192	10.19 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.65	83	323360	10.34 ug/l	99
77)	1,2,3-Trichloropropane	15.88	110	79780	10.08 ug/l	97
78)	trans-1,4-Dichloro-2-buten	16.00	53	80417	8.94 ug/l	97
79)	n-Propylbenzene	16.02	91	3335250	11.33 ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:16 2016 Quant Results File: VO06B22.RES

Quant Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration
DataAcq Meth : VO06B22

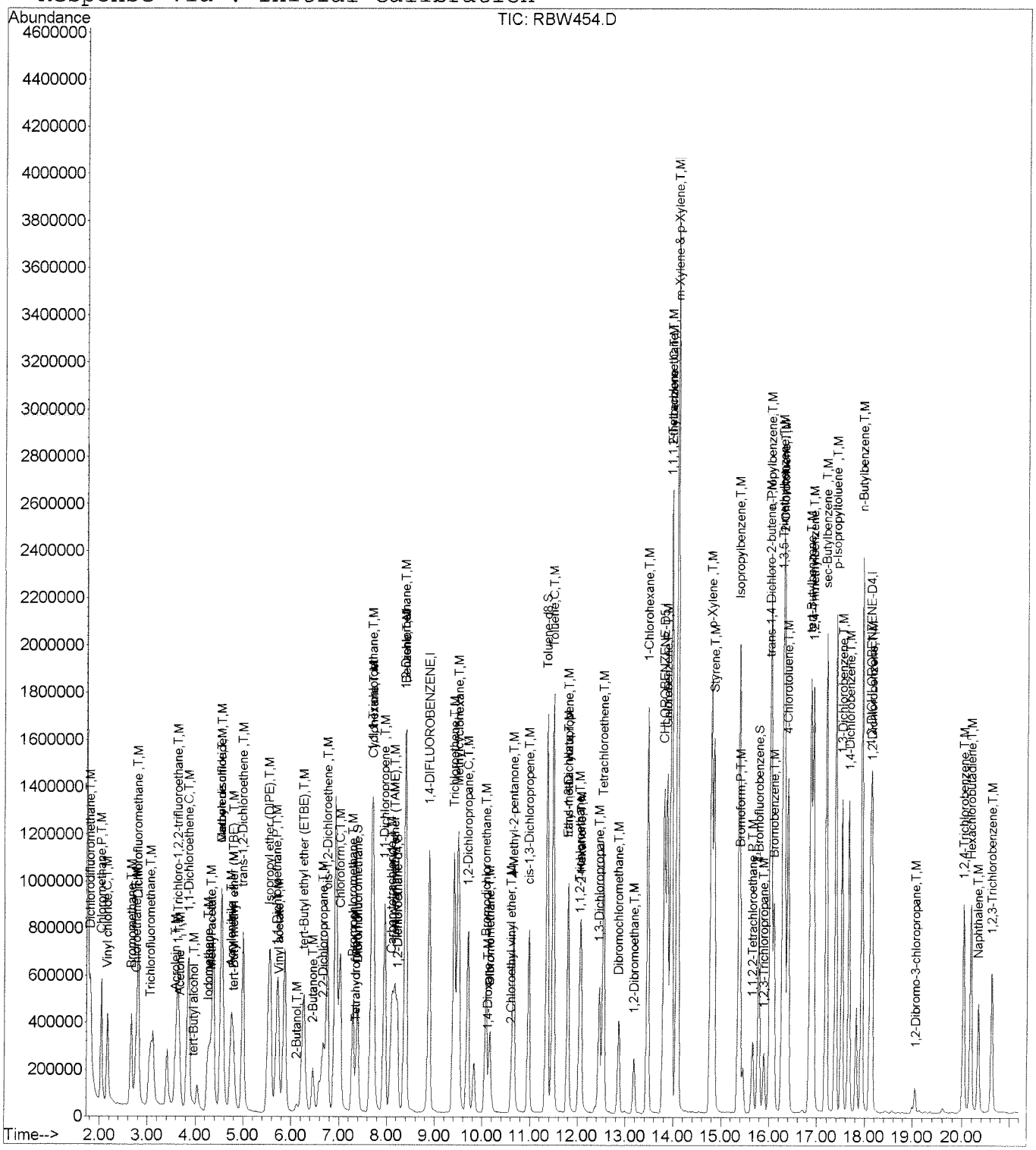
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	Bromobenzene	16.09	156	492251	10.69 ug/l	98
81)	1,3,5-Trimethylbenzene	16.27	105	1865480	10.95 ug/l	98
82)	2-Chlorotoluene	16.30	91	1919440	10.88 ug/l	99
83)	4-Chlorotoluene	16.37	91	1617786	11.13 ug/l	99
84)	tert-Butylbenzene	16.85	134	499800	10.92 ug/l	98
85)	1,2,4-Trimethylbenzene	16.91	105	1831250	11.18 ug/l	99
86)	sec-Butylbenzene	17.18	105	2639570	11.40 ug/l	99
87)	p-Isopropyltoluene	17.39	119	2104023	11.32 ug/l	100
88)	1,3-Dichlorobenzene	17.52	146	991086	11.12 ug/l	99
89)	1,4-Dichlorobenzene	17.67	146	958580	11.21 ug/l	100
90)	n-Butylbenzene	17.94	91	2136460	11.84 ug/l	99
91)	1,2-Dichlorobenzene	18.14	146	793079	10.81 ug/l	99
92)	1,2-Dibromo-3-chloropropan	19.07	157	45371	10.13 ug/l	96
93)	1,2,4-Trichlorobenzene	20.03	180	507222	11.26 ug/l	99
94)	Hexachlorobutadiene	20.18	225	311264	10.98 ug/l	99
95)	Naphthalene	20.33	128	672854	10.17 ug/l	99
96)	1,2,3-Trichlorobenzene	20.63	180	369620	10.64 ug/l	99

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B24\RBW454.D Vial: 2
Acq On : 24 Feb 2016 10:55 am Operator: ODinh
Sample : CVO06B2202 Inst : TO06
Misc : 10ppb 8260/50ppb KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 24 11:16 2016 Quant Results File: VO06B22.RE

Method : D:\HPCHEM\1\METHODS\VO06B22.M (RTE Integrator)
Title : METHOD 8260
Last Update : Tue Feb 23 10:35:24 2016
Response via : Initial Calibration



ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 0 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 1/19/16 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-013

BATCH VOF3A196

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RAR084	BFBF3A07		NA	NA	NA	NA	1809
02		085	VOF3A191	0.03 0.15					0.3 1.5 ppb
03		086	2	0.05 0.25					0.5 2.5
04		087	3	0.1 0.5					1.0 5.0
05		088	4	0.2 1					2 10
06		089	5	0.5 2.5					5 25
07		090	6	1 5					10 50
08		091	7	2 10					20 100
09		092	8	3 15					30 150
10		093	9	5 25					50 250
11		094	10	10 50					100 500 ppb
12		095	RINSE						
13		096	RINSE						
14		097	IVOF3A1901	1 5ml					
15		098	RINSE						
16		099	LOD VERF						1ppb 1/20/16 0145
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									1/21/16

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	1/19/16
ICAL ID	VOF3A19

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC CS2	SM-26 -13-02	1	250
DCC KET/AA	-23-02 -23-03		250 250
DCC 8260	-06-02		50/250
DCC GAS	-03-03 -16-03		250 250
BFB	SM-26-16-01 SM-26 -15-03	1	250/250 50
IS/SURR.	SM-26 -13-03 -14-01	1 1	250 250
ICV/LCS GAS	-19-01	1	250
ICV/LCS CS2	-20-01	1.0	250
ICV/LCS KET/AA	-22-01	5	250
ICV/LCS 8260	SM-26-20-03 SM-26 -20-03	5 5	50 50
Data File Folder	16A19		
	LOT #	Syringe Lot #	
pH strip		MSV-01-02-01-1	
Chlorine strip		MSV-01-02-22-2	
Methanol		MSV-01-02-10-13	
$NaHSO_4$		-24	
Reagent Water	RW7-15-001	-18	
Sand		NO2-C6009	
Electronic Data Archival Location		Date	
HPCHEM_VOA/TOF3			

Comments:

2-Butanol	SM-12-49-16	1.25	1000 ppm
2CE-111-TFE	SM-12-49-17	.25	
UTFE	SM-12-03-05	.25	
224TMP	SM-12-45-16	.25	
TAA	SM-12-49-11	1mL	

☐ Refer to sample weight log

Analyzed By: IR

Date Disposed: 1/21/16 Disposed By:

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 02/22/16 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A06-060

BATCH V006B226

Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01	RBW400	BFB06B15		NA	NA	NA		14:35
02	401	V006B221	A 0.03 µL	1				0.3 / 1.5 ppb
03	402	2	0.05					0.5 2.5
04	403	3	0.1					1 5
05	404	4	0.2					2 10
06	405	5	0.5					5 25
07	406	6	1					10 50
08	407	7	2					20 100
09	408	8	3					30 150
10	409	9	5					50 250
11	410	10	10					100 500
12	411	RINSE						
13	412	↓						
14	413	IV006B2201						10 50 ppb
15	414	RINSE						
16	415	LOD VERF						0.2 / 4 ppb
17	416	↓		↓	↓	↓		↓ 21:25
18								
19								
20								A: CS_2, Gas, kit-AA+4add, 8260
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								02/23/16 OD

Instrument No.	06
INITIAL CALIBRATION REFERENCE	
DATE	02/22/16
ICAL ID	V006B22

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SM-26-35-02	*	250
DCC	-33-01	*	250
DCC	-35-01	*	1250
DCC	-34-01	*	250
BFB	-29-01	1	50
IS/SURR.	-33-02 -14-01	1 *	250 250
ICV/LCS	-26 -20- -27-02	1 1	250 250
ICV/LCS	-22-01 -28-01	5 5	250 50
ICV/LCS	-31-03	5	50
ICV/LCS	SM-12-49-16	1.25	1000
Data File Folder	16B22		

	LOT #	Syringe Lot #
pH strip	—	MSV-01-01-06-01
Chlorine strip	—	-02-05
Methanol		-02-10-19
$NaHSO_4$		
Reagent Water	RW4-15-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO06	

Comments: * Varied amounts

Analyzed By: OD

Date Disposed: 02/23/16 Disposed By: OD

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 0 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 2/17/16 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: AF3-013

BATCH VOF3A1917

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RBR214	BFBF3B1D						12:15
02		215	CVOF3A1917						
03		216	VOF3B10L X						RPD out
04		217	↓ C X						
05		218	RINSE						
06		219	VOF3B10B ✓	25 ml	1.0				
07		220	↓ X ✓						
08		221	↓ Y ✓						
09		222	16B073-07M	25 ml	1.0	✓	✓		Confirmation Only
10		223	↓ -07S	↓	↓	✓	✓		
11		224	16B101-01M X			✓	✓		Power Glitch
12		225	↓ -01S			✓	✓		1 comp. Out; RPD out
13		226	↓ -01M	↓	↓	✓	✓		
14		227	RINSE						
15		228	16B101-03N ✓	25 ml	1.0	✓	✓		
16		229	16B118-04 ✓	↓	↓	✓	✓		
17		230	16B094-01N ✓			✓	✓		
18		231	16B073-07 ✓			✓	✓		
19		232	16B118-03 ✓			✓	✓		
20		233	16B101-01 ✓			✓	✓		
21		234	↓ -02N ✓	↓	↓	✓	✓		
22		235	RINSE						
23		236	CVOF3A1917A						22:58
24		237	RINSE						
25		238	↓						
26									
27									
28			IR 2/18/16						
29									
30									

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	1/19/16
ICAL ID	VOF3A19

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SV1-26-13-02	1	
DCC	-23-02	5	
DCC	-01-02	5	
DCC	-16-03	1	
BFB	SV1-26-29-02	1	50/250
IS/SURR.	-22-02	1	
ICV/LCS	-19-01	1	
ICV/LCS	-20-01	1	
ICV/LCS	-22-01	5	
ICV/LCS	-20-03	5	
Data File Folder	16B17		

	LOT #	Syringe Lot #
pH strip	HC554612	MSV-01-01-01-1
Chlorine strip	50214	-02-22-2
Methanol		-02-18
$NaHSO_4$		-02-10
Reagent Water	RW3-15-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3 16B01→16B17	2/23/16

Comments:

☐ Refer to sample weight log

Analyzed By: IR/DN

Date Disposed: ~~IR~~ 2/18/16 Disposed By: IR

IR 2/18/16

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 02/24/16 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A06-060

BATCH CV006B2202

Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01	RBW453	BFB06B17						10:23
02	454	CV006B2202						
03	455	V006B17L						
04	456	↓ C						
05	457	RINSE						
06	458	V006B17B	25mL					
07	459	16B142-15		1.0	✓	✓		
08	460	16B101-01N			✓	✓		
09	461	-01M			✓	✓		
10	462	↓ -01S	↓	↓	✓	✓		
11	463	RINSE						
12	464	16B094-03	2.5mL	10	✓	✓		leak vial.
13	465	16B123-04	25mL	1.0	✓	✓		
14	466	16B094-03I	1.0mL	25	✓	✓		
15	467	↓ -03N	2.5mL	10	✓	✓		(Foamer Sample)
16	468	16B128-01N	25mL	1.0	✓	✓		
17	469	RINSE						
18	470	↓						
19	471	↓						
20	472	16B143-04	25mL	1.0	✓	✓		
21	473	16B142-13	↓	↓	✓	✓		
22	474	↓ -14	↓	↓	✓	✓		
23	475	RINSE						
24	476	CV006B2202A						20:42
25	477→494	RINSE						
26								
27								
28								
29								
30								02/25/16 OD

Instrument No.	06
INITIAL CALIBRATION REFERENCE	
DATE	02/22/16
ICAL ID	V006B22

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SVI-26-33-01	1	50/250/1000
DCC	-13-02 -31-01	1	
DCC	-26-01	5	
DCC	-23-02	5	
BFB	-29-01	1	
IS/SURR.	-30-03	1	
ICV/LCS	-26-01 -27-02	1	
ICV/LCS	-22-01 -28-01	1.5	
ICV/LCS	↓ -31-03	5	
ICV/LCS	SVI-12-49-16	1.25	
Data File Folder	16B29		

	LOT #	Syringe Lot #
pH strip	HC954612	MSV-07-01-08-01
Chlorine strip	50214	-02-23
Methanol		-02-10-19
$NaHSO_4$		-01-07-01
Reagent Water	RW4-15-001	-02-16-02
Sand		↓ -02-18

Electronic Data Archival Location	Date
HPCHEM_VOA/TO06	

Comments:

Analyzed By: OD

Date Disposed: 02/25/16 Disposed By: OD

TCLP VOLATILE ORGANICS

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/22/16 17:51
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/22/16 17:51
Lab Samp ID:	B094-02	Dilution Factor:	10
Lab File ID:	RBB161	Matrix :	LEACHATE
Ext Btch ID:	VS03B07	% Moisture :	NA
Calib. Ref.:	RIB382	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	50	5.0	10
2-BUTANONE	ND	100	25	50
CARBON TETRACHLORIDE	ND	50	5.4	10
CHLOROBENZENE	ND	50	5.0	10
CHLOROFORM	ND	50	5.0	10
1,4-DICHLOROBENZENE	ND	50	5.0	10
1,2-DICHLOROETHANE	ND	50	5.0	10
1,1-DICHLOROETHENE	ND	50	5.0	10
TETRACHLOROETHENE	ND	50	5.0	10
TRICHLOROETHENE	ND	50	5.0	10
VINYL CHLORIDE	ND	50	6.1	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	413	500.0	82.7	70-120
4-BROMOFLUOROBENZENE	549	500.0	110	75-120
TOLUENE-D8	534	500.0	107	85-120
DIBROMOFLUOROMETHANE	465	500.0	93.0	85-115

DateTime Leached: 02/18/16 18:00

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB161.D Vial: 8
Acq On : 22 Feb 2016 5:51 pm Operator: DNguye
Sample : 16B094-02 0.5mL Inst : 03
Misc : DF=10 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:52 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

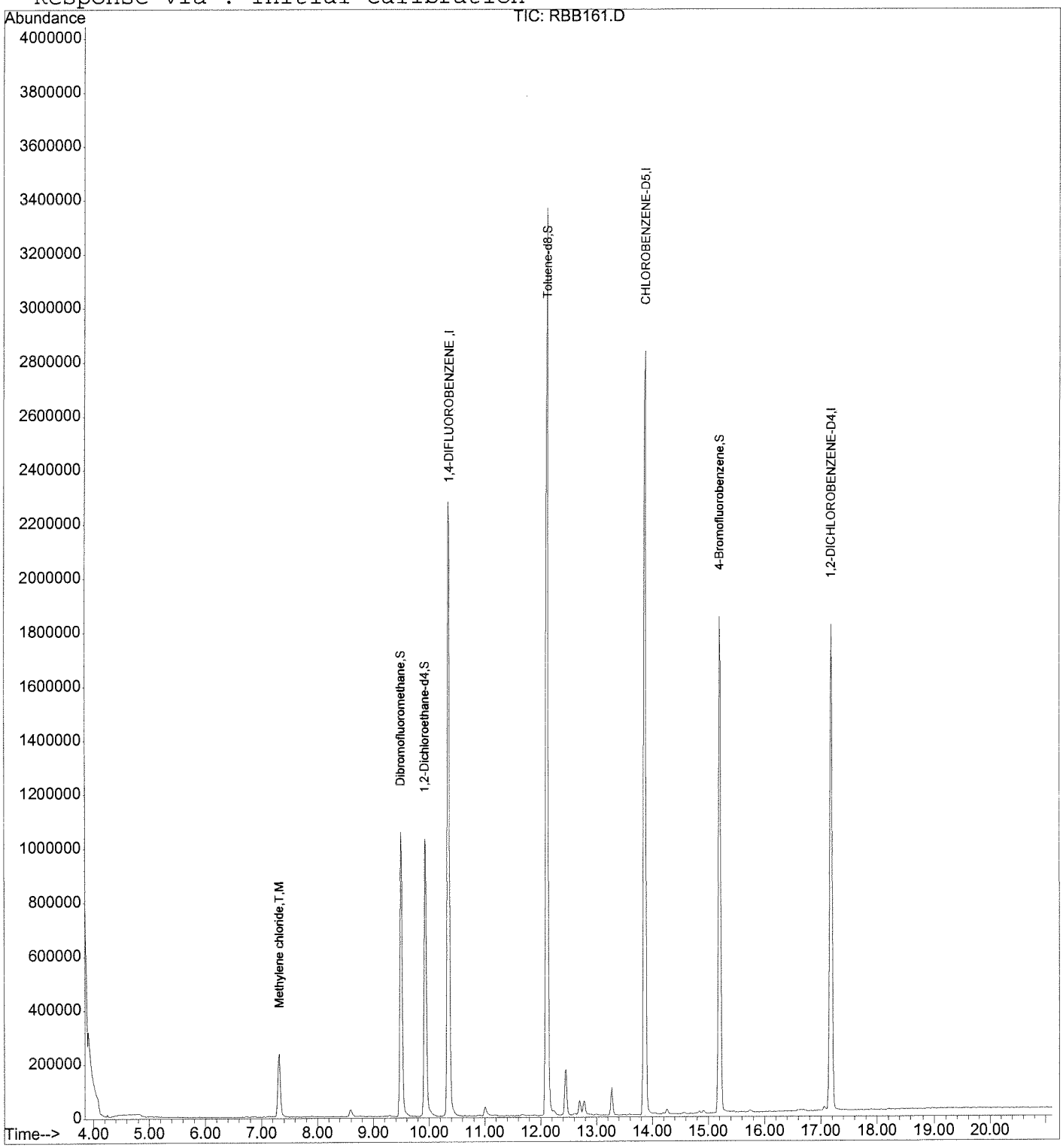
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.35	114	2504790	50.00 ug/l	0.03
52) CHLOROBENZENE-D5	13.87	117	2329622	50.00 ug/l	0.03
70) 1,2-DICHLOROBENZENE-D4	17.17	152	845322	50.00 ug/l	0.01
System Monitoring Compounds					
34) Dibromofluoromethane	9.49	111	971546	46.50 ug/l	0.02
Spiked Amount 50.000			Recovery =	93.00%	
39) 1,2-Dichloroethane-d4	9.92	65	1038598	41.33 ug/l	0.02
Spiked Amount 50.000			Recovery =	82.66%	
53) Toluene-d8	12.11	98	3006946	53.45 ug/l	0.02
Spiked Amount 50.000			Recovery =	106.90%	
73) 4-Bromofluorobenzene	15.19	95	1141361	54.87 ug/l	0.01
Spiked Amount 50.000			Recovery =	109.74%	
Target Compounds					Qvalue
18) Methylene chloride	7.32	49	242283	6.69 ug/l	100

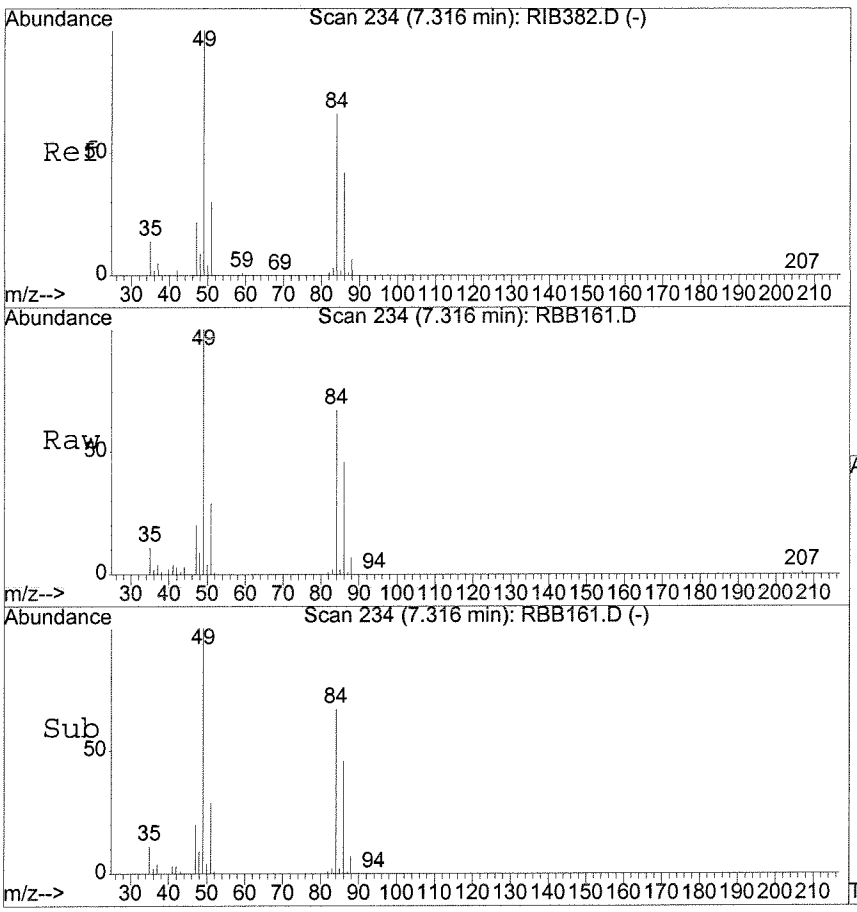
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB161.D Vial: 8
Acq On : 22 Feb 2016 5:51 pm Operator: DNguye
Sample : 16B094-02 0.5mL Inst : 03
Misc : DF=10 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:52 2016 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration

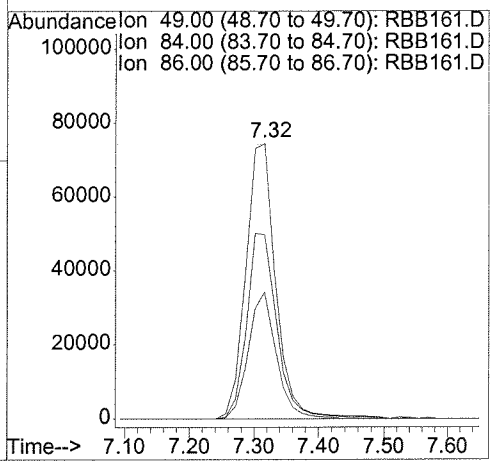




#18
Methylene chloride
Concen: 6.69 ug/l
RT: 7.32 min Scan# 234
Delta R.T. 0.03 min
Lab File: RBB161.D
Acq: 22 Feb 2016 5:51 pm

Tgt Ion: 49 Resp: 242283

Ion	Ratio	Lower	Upper
49	100		
84	67.9	37.7	97.7
86	43.0	13.1	73.1



QC SUMMARIES

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/22/16
Batch No.	: 16B094	Date Extracted:	02/22/16 16:55
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 16:55
Lab Samp ID:	VS03B07B	Dilution Factor:	1
Lab File ID:	RBB159	Matrix :	WATER
Ext Btch ID:	VS03B07	% Moisture :	NA
Calib. Ref.:	RIB382	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	5.0	0.50	1.0
2-BUTANONE	ND	10	2.5	5.0
CARBON TETRACHLORIDE	ND	5.0	0.54	1.0
CHLOROBENZENE	ND	5.0	0.50	1.0
CHLOROFORM	ND	5.0	0.50	1.0
1,4-DICHLOROBENZENE	ND	5.0	0.50	1.0
1,2-DICHLOROETHANE	ND	5.0	0.50	1.0
1,1-DICHLOROETHENE	ND	5.0	0.50	1.0
TETRACHLOROETHENE	ND	5.0	0.50	1.0
TRICHLOROETHENE	ND	5.0	0.50	1.0
VINYL CHLORIDE	ND	5.0	0.61	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	42.4	50.00	84.8	70-120
4-BROMOFLUOROBENZENE	53.6	50.00	107	75-120
TOLUENE-D8	53.5	50.00	107	85-120
DIBROMOFLUOROMETHANE	47.1	50.00	94.1	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VS03B07B	VS03B07L	VS03B07C		
LAB FILE ID:	RBB159	RBB157	RBB158		
DATE EXTRACTED:	02/22/1616:55	02/22/1615:59	02/22/1616:27	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1616:55	02/22/1615:59	02/22/1616:27	DATE RECEIVED:	02/22/16
PREP. BATCH:	VS03B07	VS03B07	VS03B07		
CALIB. REF:	RIB382	RIB382	RIB382		

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 (%)
Benzene	ND	50.0	45.9	92	50.0	43.8	88	5	80-120	30
2-Butanone	ND	250	226	90	250	222	89	2	30-150	30
Carbon Tetrachloride	ND	50.0	43.9	88	50.0	40.5	81	8	65-140	30
Chlorobenzene	ND	50.0	48.5	97	50.0	46.5	93	4	80-120	30
Chloroform	ND	50.0	41.0	82	50.0	39.0	78	5	65-135	30
1,4-Dichlorobenzene	ND	50.0	47.0	94	50.0	44.7	89	5	75-125	30
1,2-Dichloroethane	ND	50.0	41.9	84	50.0	40.1	80	4	70-130	30
1,1-Dichloroethene	ND	50.0	46.3	93	50.0	42.4	85	9	70-130	30
Tetrachloroethene	ND	50.0	42.8	86	50.0	40.0	80	7	45-150	30
Trichloroethene	ND	50.0	46.7	93	50.0	44.5	89	5	70-125	30
Vinyl Chloride	ND	50.0	47.4	95	50.0	45.5	91	4	50-145	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 (%)
1,2-Dichloroethane-d4	50.0	43.1	86	50.0	42.5	85	70-120
4-Bromofluorobenzene	50.0	49.3	99	50.0	52.3	105	75-120
Toluene-d8	50.0	52.7	105	50.0	52.3	105	85-120
Dibromofluoromethane	50.0	48.4	97	50.0	46.8	94	85-115

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/22/16
Batch No.	: 16B094	Date Extracted:	02/22/16 17:23
Sample ID:	MBLK2W	Date Analyzed:	02/22/16 17:23
Lab Samp ID:	TVB003SB	Dilution Factor:	10
Lab File ID:	RBB160	Matrix :	LEACHATE
Ext Btch ID:	VS03B07	% Moisture :	NA
Calib. Ref.:	RIB382	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	50	5.0	10
2-BUTANONE	ND	100	25	50
CARBON TETRACHLORIDE	ND	50	5.4	10
CHLOROBENZENE	ND	50	5.0	10
CHLOROFORM	ND	50	5.0	10
1,4-DICHLOROBENZENE	ND	50	5.0	10
1,2-DICHLOROETHANE	ND	50	5.0	10
1,1-DICHLOROETHENE	ND	50	5.0	10
TETRACHLOROETHENE	ND	50	5.0	10
TRICHLOROETHENE	ND	50	5.0	10
VINYL CHLORIDE	ND	50	6.1	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	413	500.0	82.6	70-120
4-BROMOFLUOROBENZENE	543	500.0	109	75-120
TOLUENE-D8	541	500.0	108	85-120
DIBROMOFLUOROMETHANE	466	500.0	93.1	85-115

DateTime Leached: 02/18/16 18:00

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB159.D Vial: 6
Acq On : 22 Feb 2016 4:55 pm Operator: DNguye
Sample : VS03B07B 5.0mL Inst : 03
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:51 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.35	114	2527933	50.00	ug/l	0.03
52) CHLOROBENZENE-D5	13.86	117	2398618	50.00	ug/l	0.02
70) 1,2-DICHLOROBENZENE-D4	17.18	152	907296	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.50	111	992359	47.06	ug/l	0.03
Spiked Amount 50.000			Recovery = 94.12%			
39) 1,2-Dichloroethane-d4	9.93	65	1075006	42.39	ug/l	0.03
Spiked Amount 50.000			Recovery = 84.78%			
53) Toluene-d8	12.10	98	3096755	53.46	ug/l	0.00
Spiked Amount 50.000			Recovery = 106.92%			
73) 4-Bromofluorobenzene	15.20	95	1195593	53.56	ug/l	0.02
Spiked Amount 50.000			Recovery = 107.12%			

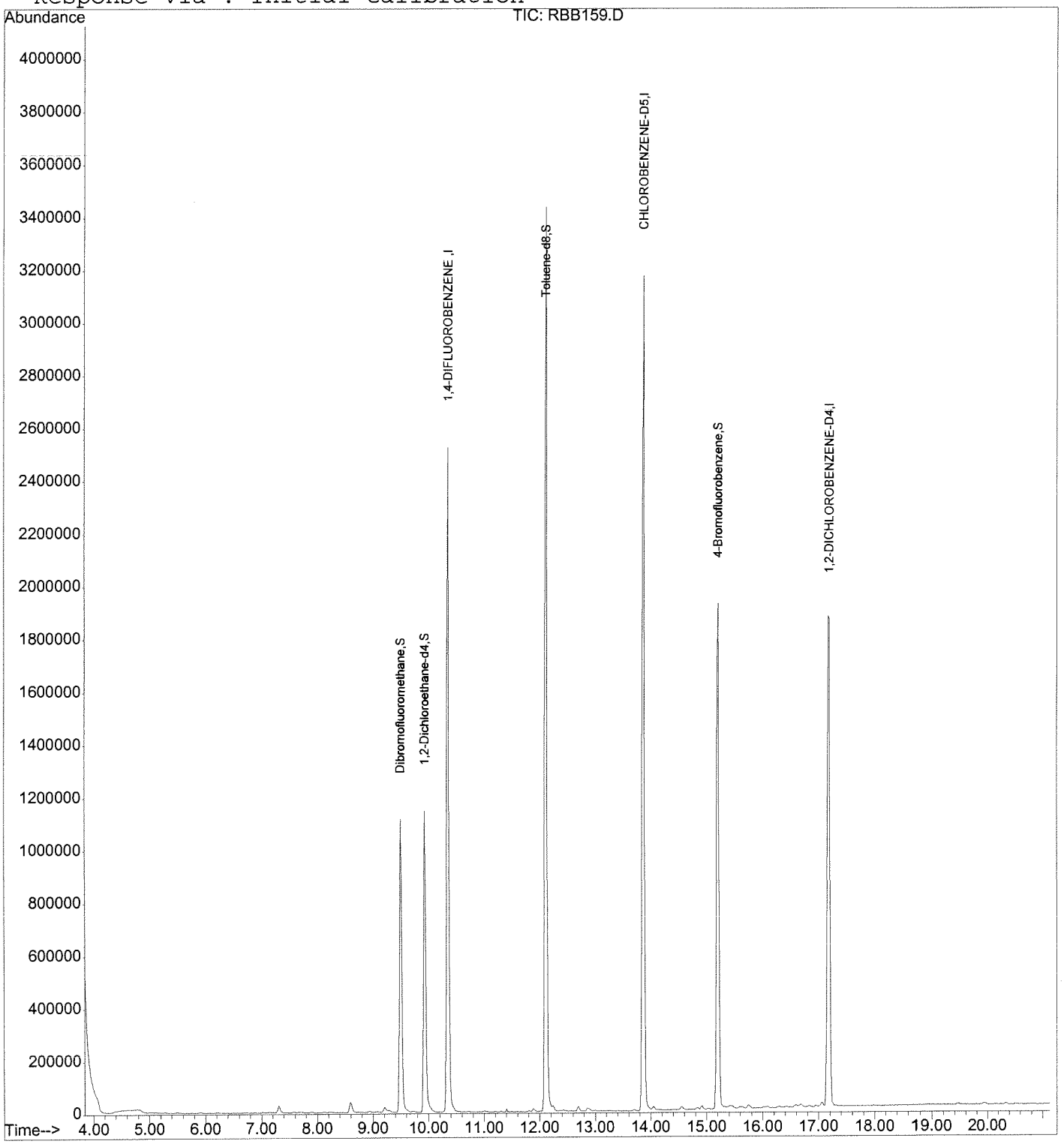
Target Compounds Qvalue

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB159.D Vial: 6
Acq On : 22 Feb 2016 4:55 pm Operator: DNguye
Sample : VS03B07B 5.0mL Inst : 03
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:51 2016 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB157.D Vial: 4
Acq On : 22 Feb 2016 3:59 pm Operator: DNguye
Sample : VS03B07L 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.35	114	1955485	50.00	ug/l	0.03
52) CHLOROBENZENE-D5	13.86	117	1854952	50.00	ug/l	0.02
70) 1,2-DICHLOROBENZENE-D4	17.18	152	834276	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.48	111	789044	48.37	ug/l	0.01
Spiked Amount 50.000			Recovery = 96.74%			
39) 1,2-Dichloroethane-d4	9.92	65	845617	43.10	ug/l	0.01
Spiked Amount 50.000			Recovery = 86.20%			
53) Toluene-d8	12.11	98	2362543	52.74	ug/l	0.01
Spiked Amount 50.000			Recovery = 105.48%			
73) 4-Bromofluorobenzene	15.19	95	1012968	49.35	ug/l	0.00
Spiked Amount 50.000			Recovery = 98.70%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	4.02	85	586136	50.44	ug/l	98
4) Chloromethane	4.38	50	567626	44.41	ug/l	99
5) Vinyl chloride	4.62	62	477804	47.41	ug/l	100
7) Bromomethane	5.26	94	452238	43.27	ug/l	100
8) Chloroethane	5.42	64	387288	60.63	ug/l	91
9) Dichlorofluoromethane	5.72	67	1494366	51.45	ug/l	100
10) Trichlorofluoromethane	5.79	101	832634	50.38	ug/l	99
11) Acrolein	6.48	56	351539	184.24	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	6.55	151	356486	48.38	ug/l	98
13) 1,1-Dichloroethene	6.61	61	1085212	46.30	ug/l	99
14) Acetone	6.67	43	1080746	191.19	ug/l	92
15) Iodomethane	6.89	142	1223986	43.22	ug/l	98
16) Carbon disulfide	7.01	76	2803711	49.43	ug/l	99
18) Methylene chloride	7.30	49	1192077	42.18	ug/l	100
19) tert-Butyl alcohol	7.34	59	364008	216.05	ug/l	66
20) tert-Butyl methyl ether (M	7.56	73	1792483	43.83	ug/l	96
21) trans-1,2-Dichloroethene	7.64	61	1117345	46.30	ug/l	99
22) Acrylonitrile	7.62	53	1285542	271.30	ug/l	99
23) Isopropyl ether (DIPE)	8.11	45	2981983	46.48	ug/l	98
24) Vinyl acetate	8.16	43	2494466	58.84	ug/l	100
25) 1,1-Dichloroethane	8.20	63	1442708	45.36	ug/l	99
26) tert-Butyl ethyl ether (ET	8.56	59	2450418	46.33	ug/l	98
27) 2-Butanone	8.87	43	2022722	226.18	ug/l	98
28) 2,2-Dichloropropane	8.90	77	1020301	48.07	ug/l	99
29) cis-1,2-Dichloroethene	8.92	96	826183	47.25	ug/l	99
31) Bromochloromethane	9.25	49	994889	42.74	ug/l	97
32) Tetrahydrofuran	9.28	42	209358	42.04	ug/l	98

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB157.D Vial: 4
Acq On : 22 Feb 2016 3:59 pm Operator: DNguye
Sample : VS03B07L 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	9.28	83	1417655	40.99 ug/l	100
35)	1,1,1-Trichloroethane	9.53	97	997286	42.40 ug/l	100
37)	1,1-Dichloropropene	9.71	110	306676	47.67 ug/l	100
38)	Carbon tetrachloride	9.74	119	806637	43.88 ug/l	100
40)	tert-Amyl methyl ether (TA	9.96	87	419256	44.00 ug/l	96
41)	Benzene	9.99	78	2746919	45.85 ug/l	99
42)	1,2-Dichloroethane	10.02	62	1029854	41.86 ug/l	99
43)	Trichloroethene	10.71	130	712848	46.72 ug/l	94
45)	1,2-Dichloropropane	11.00	63	860467	45.71 ug/l	89
46)	1,4-Dioxane	11.12	88	128432	782.12 ug/l	94
47)	Dibromomethane	11.20	93	536771	40.30 ug/l	97
48)	Bromodichloromethane	11.32	83	1122250	40.16 ug/l	100
49)	2-Chloroethyl vinyl ether	11.52	63	496782	45.03 ug/l	100
50)	cis-1,3-Dichloropropene	11.79	75	1405322	41.66 ug/l	97
51)	4-Methyl-2-pentanone	11.87	43	4803775	211.74 ug/l	98
54)	Toluene	12.19	91	2800195	45.35 ug/l	99
55)	Ethyl methacrylate	12.36	69	977508	45.12 ug/l	93
56)	trans-1,3-Dichloropropene	12.42	75	1203908	42.56 ug/l	97
57)	1,1,2-Trichloroethane	12.67	97	640897	44.96 ug/l	96
58)	2-Hexanone	12.82	43	3397949	223.96 ug/l	94
59)	Tetrachloroethene	12.85	164	512001	42.83 ug/l	95
60)	1,3-Dichloropropane	12.88	76	1204663	44.55 ug/l	99
61)	Dibromochloromethane	13.21	129	779741	45.39 ug/l	100
62)	1,2-Dibromoethane	13.39	107	681676	44.11 ug/l	99
63)	1-Chlorohexane	13.70	91	1118073	42.87 ug/l	98
64)	Chlorobenzene	13.89	112	1820503	48.51 ug/l	92
65)	Ethylbenzene	13.92	91	3307818	44.55 ug/l	95
66)	1,1,1,2-Tetrachloroethane	13.95	131	709026	46.64 ug/l	97
67)	m-Xylene & p-Xylene	14.04	91	4949590	84.19 ug/l	93
68)	o-Xylene	14.53	91	2652090	42.66 ug/l	93
69)	Styrene	14.55	104	2029701	48.32 ug/l	95
71)	Bromoform	14.90	173	484925	45.25 ug/l	99
72)	Isopropylbenzene	14.92	105	2812629	49.42 ug/l	97
74)	1,1,2,2-Tetrachloroethane	15.32	83	1035717	46.41 ug/l	100
75)	trans-1,4-Dichloro-2-buten	15.37	53	297472	47.12 ug/l	90
76)	n-Propylbenzene	15.41	91	4044544	48.53 ug/l	97
77)	1,2,3-Trichloropropane	15.43	110	231669	51.87 ug/l	96
78)	Bromobenzene	15.46	156	762110	43.81 ug/l	97
79)	1,3,5-Trimethylbenzene	15.57	105	2308001	49.00 ug/l	98
80)	2-Chlorotoluene	15.62	91	2554004	46.94 ug/l	94
81)	4-Chlorotoluene	15.74	91	2410448	48.51 ug/l	96

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB157.D Vial: 4
Acq On : 22 Feb 2016 3:59 pm Operator: DNguye
Sample : VS03B07L 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

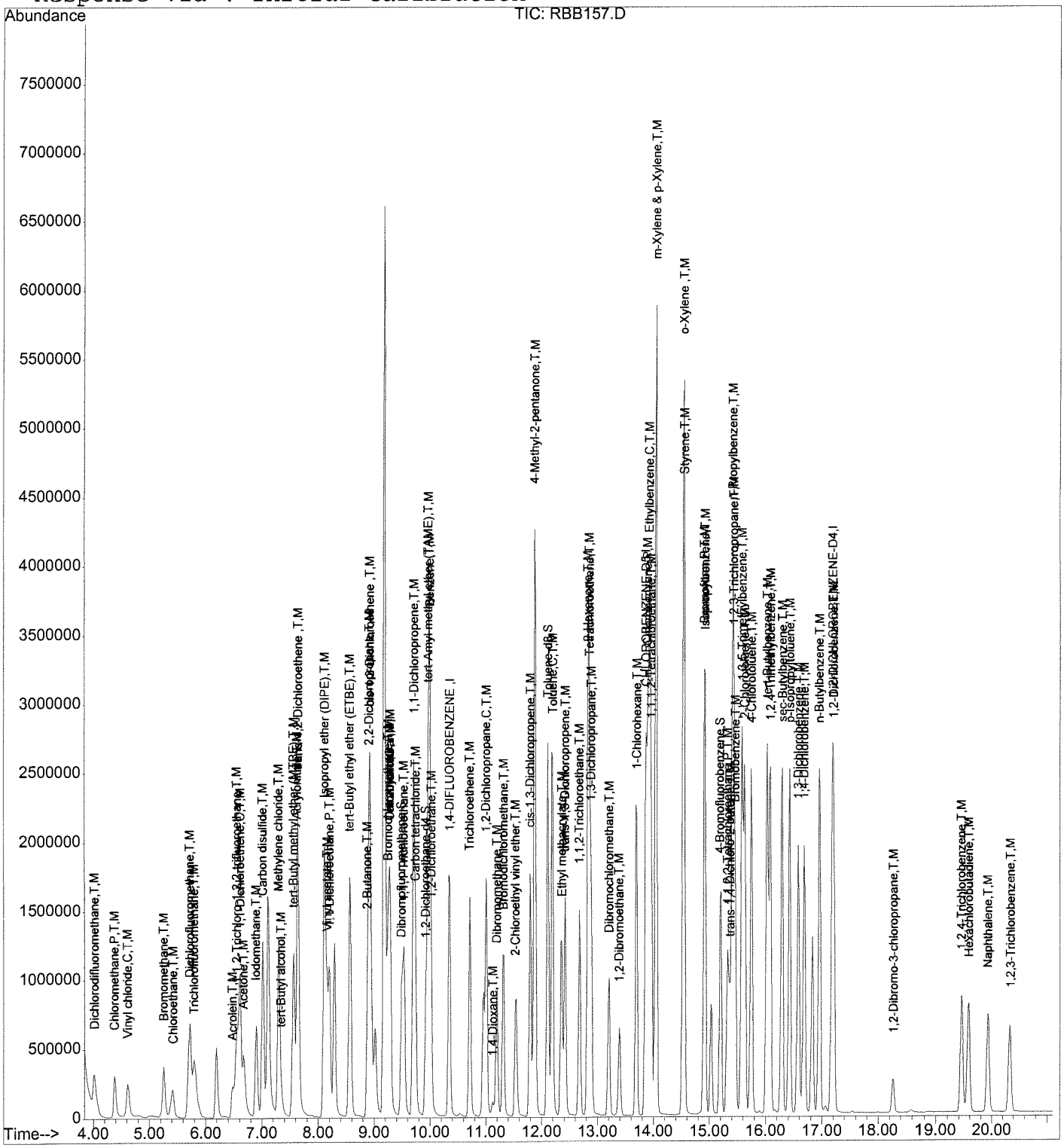
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
82)	tert-Butylbenzene	16.02	134	510238	52.27 ug/l	#	85
83)	1,2,4-Trimethylbenzene	16.08	105	2367466	49.20 ug/l		88
84)	sec-Butylbenzene	16.29	105	3007782	48.76 ug/l		100
85)	p-Isopropyltoluene	16.42	119	2319644	51.00 ug/l		95
86)	1,3-Dichlorobenzene	16.57	146	1328702	47.47 ug/l		98
87)	1,4-Dichlorobenzene	16.68	146	1295770	47.01 ug/l		97
88)	n-Butylbenzene	16.94	91	2498104	49.26 ug/l		98
89)	1,2-Dichlorobenzene	17.20	146	1209386	47.37 ug/l		97
90)	1,2-Dibromo-3-chloropropan	18.27	157	126198	43.91 ug/l		98
91)	1,2,4-Trichlorobenzene	19.45	180	523335	50.17 ug/l		98
92)	Hexachlorobutadiene	19.58	225	321716	48.54 ug/l		99
93)	Naphthalene	19.92	128	1169568	48.79 ug/l		100
94)	1,2,3-Trichlorobenzene	20.34	180	416381	47.93 ug/l		98

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB157.D Vial: 4
Acq On : 22 Feb 2016 3:59 pm Operator: DNguye
Sample : VS03B07L 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB158.D Vial: 5
Acq On : 22 Feb 2016 4:27 pm Operator: DNguye
Sample : VS03B07C 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:50 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.35	114	2284816	50.00	ug/l	0.02
52) CHLOROBENZENE-D5	13.86	117	2213650	50.00	ug/l	0.02
70) 1,2-DICHLOROBENZENE-D4	17.18	152	905838	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.50	111	892281	46.82	ug/l	0.03
Spiked Amount 50.000			Recovery = 93.64%			
39) 1,2-Dichloroethane-d4	9.93	65	973410	42.47	ug/l	0.03
Spiked Amount 50.000			Recovery = 84.94%			
53) Toluene-d8	12.10	98	2793534	52.26	ug/l	0.00
Spiked Amount 50.000			Recovery = 104.52%			
73) 4-Bromofluorobenzene	15.20	95	1165246	52.28	ug/l	0.02
Spiked Amount 50.000			Recovery = 104.56%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	4.02	85	656584	48.36	ug/l	99
4) Chloromethane	4.39	50	635004	42.52	ug/l	100
5) Vinyl chloride	4.63	62	535737	45.49	ug/l	99
7) Bromomethane	5.28	94	489342	40.07	ug/l	100
8) Chloroethane	5.45	64	423364	56.72	ug/l	92
9) Dichlorofluoromethane	5.75	67	1558212	45.91	ug/l	99
10) Trichlorofluoromethane	5.81	101	925683	47.93	ug/l	99
11) Acrolein	6.49	56	418477	187.73	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	6.58	151	359953	41.81	ug/l	99
13) 1,1-Dichloroethene	6.61	61	1162371	42.44	ug/l	99
14) Acetone	6.68	43	1175780	178.02	ug/l	92
15) Iodomethane	6.91	142	1312585	39.66	ug/l	98
16) Carbon disulfide	7.03	76	3024897	45.64	ug/l	100
18) Methylene chloride	7.31	49	1317331	39.89	ug/l	99
19) tert-Butyl alcohol	7.35	59	431196	219.04	ug/l	66
20) tert-Butyl methyl ether (M	7.58	73	1986881	41.58	ug/l	96
21) trans-1,2-Dichloroethene	7.65	61	1212256	43.00	ug/l	99
22) Acrylonitrile	7.64	53	1395556	252.07	ug/l	99
23) Isopropyl ether (DIPE)	8.11	45	3369644	44.95	ug/l	99
24) Vinyl acetate	8.16	43	3147140	63.53	ug/l	100
25) 1,1-Dichloroethane	8.20	63	1590165	42.79	ug/l	99
26) tert-Butyl ethyl ether (ET	8.58	59	2711578	43.88	ug/l	98
27) 2-Butanone	8.89	43	2321909	222.21	ug/l	98
28) 2,2-Dichloropropane	8.92	77	1037352	41.83	ug/l	98
29) cis-1,2-Dichloroethene	8.93	96	892010	43.66	ug/l	99
31) Bromochloromethane	9.25	49	1091630	40.14	ug/l	96
32) Tetrahydrofuran	9.28	42	257285	44.22	ug/l	99

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB158.D Vial: 5
Acq On : 22 Feb 2016 4:27 pm Operator: DNguye
Sample : VS03B07C 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:50 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	9.29	83	1575356	38.98	ug/l	99
35)	1,1,1-Trichloroethane	9.54	97	1068535	38.88	ug/l	99
37)	1,1-Dichloropropene	9.71	110	331681	44.12	ug/l	100
38)	Carbon tetrachloride	9.74	119	869561	40.48	ug/l	99
40)	tert-Amyl methyl ether (TA	9.98	87	465659	41.83	ug/l	95
41)	Benzene	9.99	78	3062642	43.76	ug/l	98
42)	1,2-Dichloroethane	10.02	62	1153637	40.14	ug/l	100
43)	Trichloroethene	10.72	130	792669	44.46	ug/l	94
45)	1,2-Dichloropropane	11.00	63	994789	45.23	ug/l	93
46)	1,4-Dioxane	11.12	88	144258	751.87	ug/l	95
47)	Dibromomethane	11.20	93	608490	39.10	ug/l	97
48)	Bromodichloromethane	11.32	83	1277520	39.13	ug/l	100
49)	2-Chloroethyl vinyl ether	11.54	63	605091	46.94	ug/l	100
50)	cis-1,3-Dichloropropene	11.79	75	1622140	41.16	ug/l	96
51)	4-Methyl-2-pentanone	11.88	43	5537153	208.89	ug/l	97
54)	Toluene	12.19	91	3177208	43.12	ug/l	99
55)	Ethyl methacrylate	12.36	69	1186408	45.89	ug/l	93
56)	trans-1,3-Dichloropropene	12.42	75	1404375	41.61	ug/l	93
57)	1,1,2-Trichloroethane	12.67	97	754397	44.34	ug/l	97
58)	2-Hexanone	12.83	43	3936396	217.41	ug/l	94
59)	Tetrachloroethene	12.85	164	570501	39.99	ug/l	96
60)	1,3-Dichloropropane	12.88	76	1431001	44.35	ug/l	100
61)	Dibromochloromethane	13.21	129	915651	44.67	ug/l	100
62)	1,2-Dibromoethane	13.39	107	810446	43.95	ug/l	100
63)	1-Chlorohexane	13.70	91	1252682	40.25	ug/l	98
64)	Chlorobenzene	13.89	112	2081503	46.48	ug/l	92
65)	Ethylbenzene	13.92	91	3724555	42.04	ug/l	95
66)	1,1,1,2-Tetrachloroethane	13.97	131	797958	43.99	ug/l	98
67)	m-Xylene & p-Xylene	14.04	91	5526832	78.77	ug/l	93
68)	o-Xylene	14.53	91	2929073	39.48	ug/l	93
69)	Styrene	14.55	104	2260280	45.09	ug/l	96
71)	Bromoform	14.90	173	563098	48.39	ug/l	100
72)	Isopropylbenzene	14.92	105	3024353	48.95	ug/l	97
74)	1,1,2,2-Tetrachloroethane	15.32	83	1190090	49.11	ug/l	99
75)	trans-1,4-Dichloro-2-buten	15.37	53	321301	46.87	ug/l	92
76)	n-Propylbenzene	15.41	91	4342163	47.98	ug/l	97
77)	1,2,3-Trichloropropane	15.43	110	263766	54.39	ug/l	95
78)	Bromobenzene	15.45	156	843339	44.65	ug/l	97
79)	1,3,5-Trimethylbenzene	15.57	105	2445832	47.83	ug/l	97
80)	2-Chlorotoluene	15.62	91	2753101	46.60	ug/l	94
81)	4-Chlorotoluene	15.74	91	2584609	47.91	ug/l	96

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB158.D Vial: 5
Acq On : 22 Feb 2016 4:27 pm Operator: DNguye
Sample : VS03B07C 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:50 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

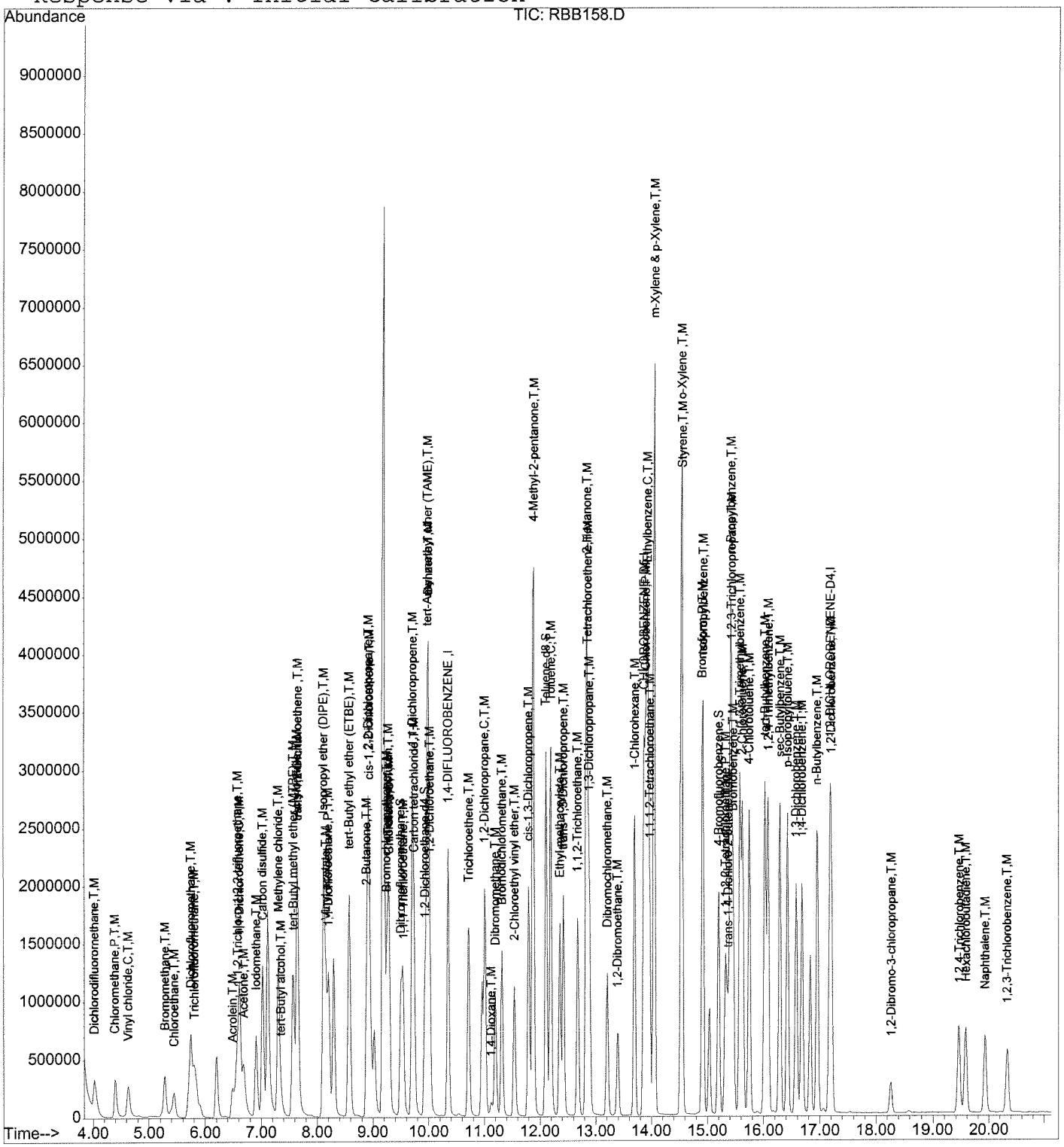
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
82)	tert-Butylbenzene	16.02	134	538286	50.79 ug/l	#	85
83)	1,2,4-Trimethylbenzene	16.08	105	2495461	47.76 ug/l		87
84)	sec-Butylbenzene	16.29	105	3154788	47.10 ug/l		100
85)	p-Isopropyltoluene	16.42	119	2412762	48.86 ug/l		94
86)	1,3-Dichlorobenzene	16.57	146	1371971	45.14 ug/l		97
87)	1,4-Dichlorobenzene	16.68	146	1337056	44.68 ug/l		97
88)	n-Butylbenzene	16.94	91	2508752	45.57 ug/l		98
89)	1,2-Dichlorobenzene	17.20	146	1238473	44.68 ug/l		97
90)	1,2-Dibromo-3-chloropropan	18.27	157	136145	43.63 ug/l		97
91)	1,2,4-Trichlorobenzene	19.46	180	481276	42.49 ug/l		98
92)	Hexachlorobutadiene	19.58	225	305269	42.42 ug/l		98
93)	Naphthalene	19.92	128	1102385	42.35 ug/l		100
94)	1,2,3-Trichlorobenzene	20.32	180	373412	39.59 ug/l		99

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB158.D Vial: 5
Acq On : 22 Feb 2016 4:27 pm Operator: DNguye
Sample : VS03B07C 5.0mL Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:50 2016 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration



322

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB160.D Vial: 7
Acq On : 22 Feb 2016 5:23 pm Operator: DNguye
Sample : TVB003SB 0.5mL Inst : 03
Misc : DF=10 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:51 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

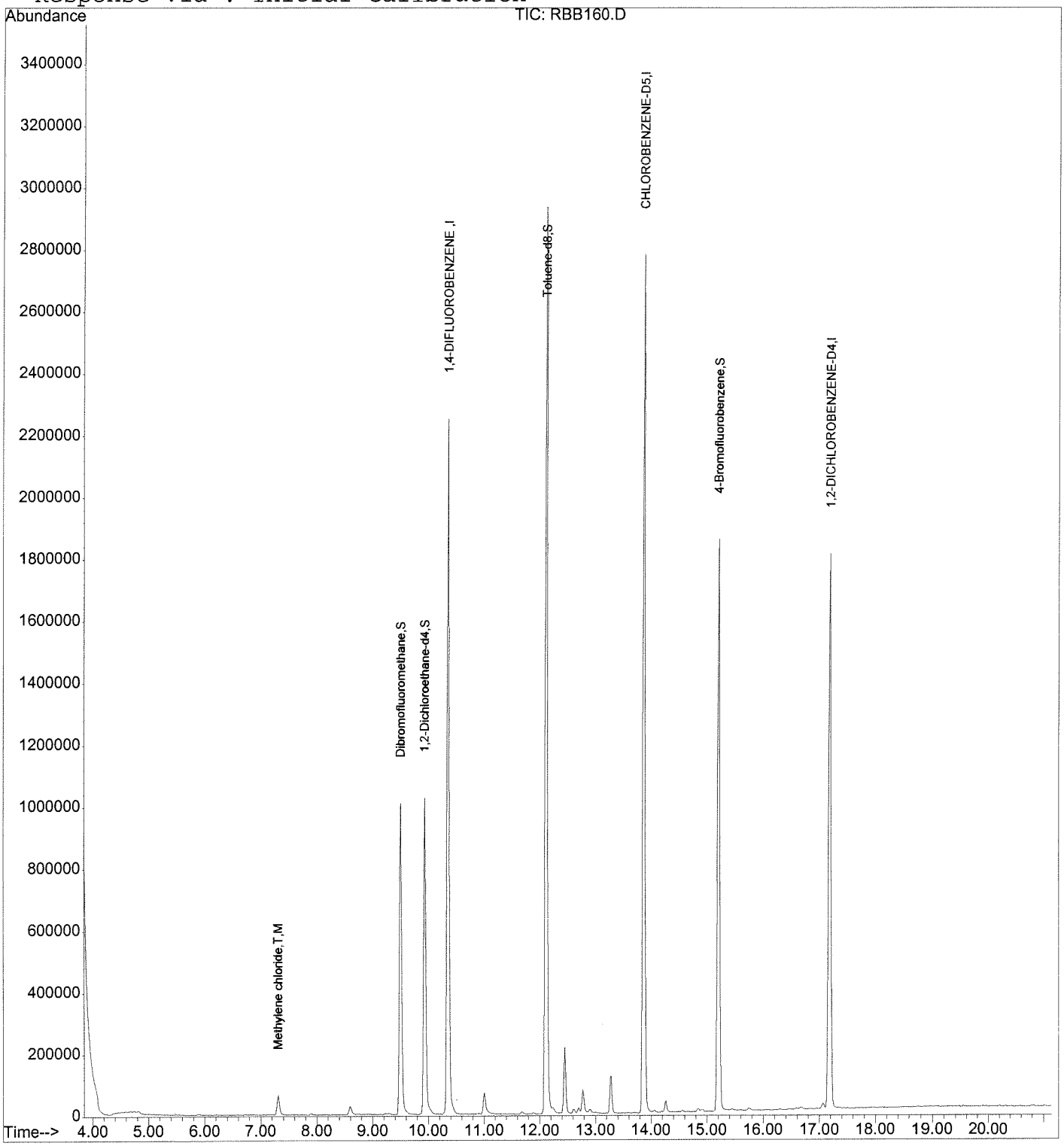
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.35	114	2287742	50.00	ug/l	0.03
52) CHLOROBENZENE-D5	13.86	117	2134055	50.00	ug/l	0.02
70) 1,2-DICHLOROBENZENE-D4	17.18	152	819852	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.50	111	888681	46.57	ug/l	0.03
Spiked Amount 50.000			Recovery = 93.14%			
39) 1,2-Dichloroethane-d4	9.93	65	947442	41.28	ug/l	0.03
Spiked Amount 50.000			Recovery = 82.56%			
53) Toluene-d8	12.10	98	2786243	54.06	ug/l	0.00
Spiked Amount 50.000			Recovery = 108.12%			
73) 4-Bromofluorobenzene	15.20	95	1096154	54.34	ug/l	0.02
Spiked Amount 50.000			Recovery = 108.68%			
Target Compounds						Qvalue
18) Methylene chloride	7.31	49	61070	1.85	ug/l	99

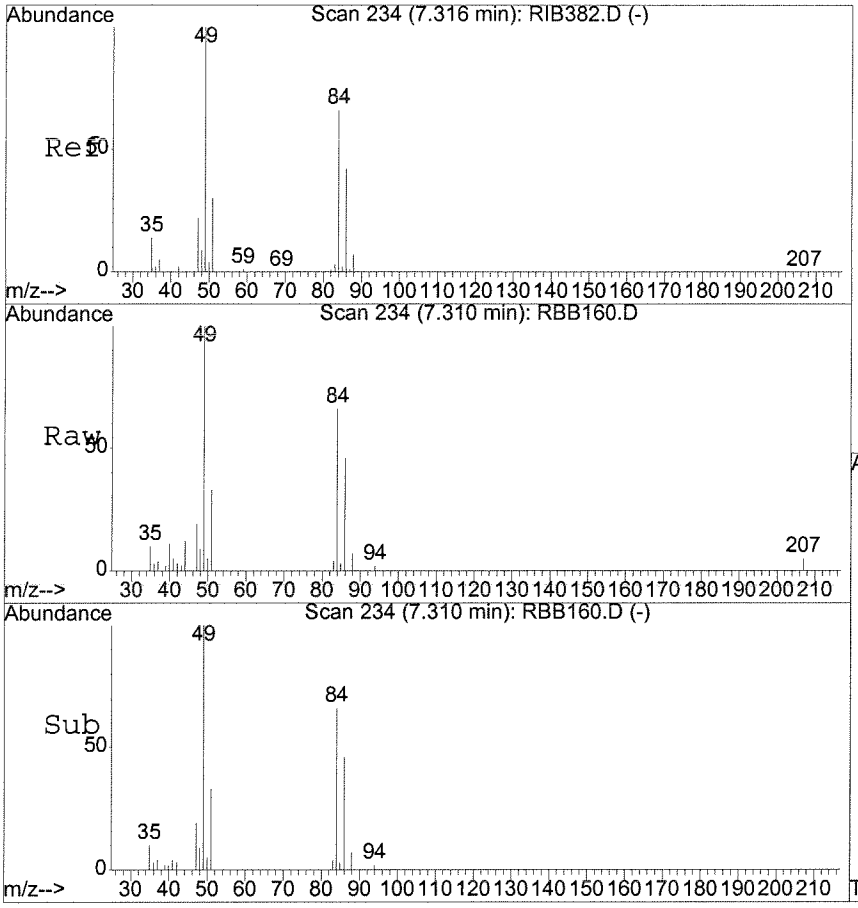
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB160.D Vial: 7
Acq On : 22 Feb 2016 5:23 pm Operator: DNguye
Sample : TVB003SB 0.5mL Inst : 03
Misc : DF=10 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:51 2016 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration

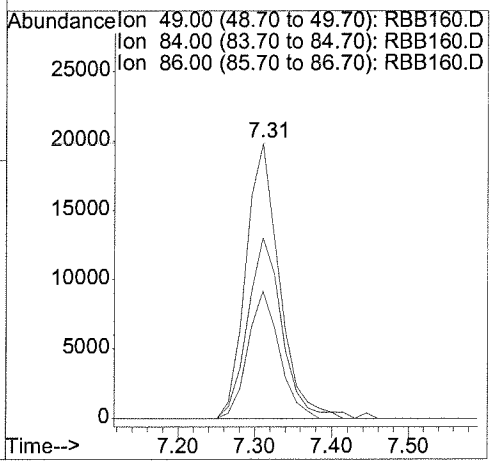




#18
Methylene chloride
Concen: 1.85 ug/l
RT: 7.31 min Scan# 234
Delta R.T. 0.03 min
Lab File: RBB160.D
Acq: 22 Feb 2016 5:23 pm

Tgt Ion: 49 Resp: 61070

Ion	Ratio	Lower	Upper
49	100		
84	66.5	37.7	97.7
86	43.2	13.1	73.1



INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RIB376
Instrument ID: 03
GC Column: ZB-624 ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 09/24/15
BFB Injection Time : 22:24
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.87
75	30.0 - 60.0% of mass 95	46.46
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.19
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	64.72
175	5.0 - 9.0% of mass 174	4.72(7.3)1
176	95.0 - 101.0% of mass 174	62.00(95.8)1
177	5.0 - 9.0% of mass 176	4.23(6.8)2

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

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	VSTD01	V003I251	RIB377	09/24/15	22:55
2	VSTD02	V003I252	RIB378	09/24/15	23:23
3	VSTD04	V003I253	RIB379	09/24/15	23:51
4	VSTD010	V003I254	RIB380	09/25/15	00:19
5	VSTD020	V003I255	RIB381	09/25/15	00:48
6	VSTD050	V003I256	RIB382	09/25/15	01:16
7	VSTD100	V003I257	RIB383	09/25/15	01:45
8	VSTD200	V003I258	RIB384	09/25/15	02:13
9	VSTD300	V003I259	RIB385	09/25/15	02:41
10	VSTD500	V003I2510	RIB386	09/25/15	03:09

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :03
Beginning DateTime :09/24/15 22:55
Spike Units :PPB
IC File :RIB382

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :09/25/15 03:09
HPChem Method :V003I25

M	IDX	Parameters	1 22:55 RIB377	2 23:23 RIB378	4 23:51 RIB379	10 00:19 RIB380	20 00:48 RIB381	50 01:16 RIB382	100 01:45 RIB383	200 02:13 RIB384	300 02:41 RIB385	500 03:09 RIB386	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.3689
	2	Chlorotrifluoroethylene	------	0.069	0.095	0.102	0.102	0.109	0.107	0.115	0.105	0.112	0.102	13.57	3.9653
	3	Dichlorodifluoromethane	0.368	0.215	0.298	0.261	0.297	0.305	0.296	0.324	0.300	0.307	0.297	13.31	4.0362
	4	Chloromethane	0.344	0.318	0.331	0.321	0.320	0.348	0.310	0.325	0.326	0.325	0.327	3.54	4.4132
	5	Vinyl chloride	0.257	0.231	0.253	0.254	0.267	0.274	0.262	0.245	0.267	0.268	0.258	4.93	4.6485
	6	2-Chloro-1,1,1-trifluoroethane	------	0.114	0.127	0.135	0.138	0.152	0.146	0.160	0.150	0.158	0.142	10.63	4.8028
	7	Bromomethane	------	0.246	0.312	0.282	0.275	0.261	0.228	------	------	------	0.267	10.96	5.2848
	8	Chloroethane	0.182	0.163	0.170	0.166	0.184	0.155	0.159	0.126	------	------	0.163	11.02	5.4473
	9	Dichlorofluoromethane	0.872	0.814	0.844	0.682	0.739	0.763	0.685	0.695	0.589	------	0.743	12.19	5.7512
	10	Trichlorofluoromethane	0.409	0.370	0.434	0.410	0.454	0.438	0.431	0.452	0.419	0.409	0.423	5.90	5.8209
5	11	Acrolein	0.066	0.069	0.040	0.045	0.045	0.048	0.048	0.047	0.049	0.050	0.051	18.38	6.5032
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.195	0.210	0.200	0.174	0.186	0.201	0.181	0.172	0.176	0.188	0.188	6.89	6.5851
	13	1,1-Dichloroethene	0.605	0.597	0.647	0.564	0.579	0.647	0.581	0.599	0.574	0.601	0.599	4.71	6.6268
5	14	Acetone	0.194	0.166	0.148	0.129	0.123	0.137	0.133	0.133	0.143	0.140	0.145	14.46	6.7103
	15	Iodomethane	0.728	0.716	0.734	0.681	0.705	0.761	0.718	0.762	0.716	0.722	0.724	3.33	6.9233
	16	Carbon disulfide	1.271	1.307	1.535	1.468	1.517	1.611	1.488	1.519	1.364	1.424	1.450	7.44	7.0335
	17	Methyl acetate	0.288	0.199	0.241	0.317	0.307	0.320	0.317	0.319	0.325	0.335	0.297	14.62	7.1199
	18	Methylene chloride	------	------	0.935	0.742	0.687	0.720	0.676	0.715	0.655	0.651	0.723	12.68	7.3168
5	19	tert-Butyl alcohol	------	0.044	0.044	0.040	0.041	0.043	0.043	0.041	0.050	0.043	0.043	6.87	7.3849
	20	tert-Butyl methyl ether (MTBE)	1.088	1.049	1.023	0.979	1.028	1.086	1.049	1.034	1.061	1.060	1.046	3.08	7.5936
	21	trans-1,2-Dichloroethene	0.641	0.631	0.652	0.563	0.629	0.667	0.593	0.609	0.587	0.598	0.617	5.26	7.6637
5	22	Acrylonitrile	0.109	0.120	0.114	0.110	0.117	0.132	0.123	0.123	0.134	0.129	0.121	7.27	7.6637
	23	Isopropyl ether (DIPE)	1.607	1.596	1.684	1.474	1.640	1.724	1.721	1.625	1.694	------	1.641	4.78	8.1363
	24	Vinyl acetate	------	------	0.816	0.992	1.144	1.107	1.131	1.147	1.207	1.128	1.084	11.44	8.1809
	25	1,1-Dichloroethane	0.876	0.800	0.835	0.766	0.810	0.849	0.788	0.813	0.780	0.815	0.813	4.08	8.2238
	26	tert-Butyl ethyl ether (ETBE)	1.358	1.294	1.345	1.254	1.366	1.428	1.401	1.344	1.380	------	1.352	3.91	8.5948
5	27	2-Butanone	0.183	0.230	0.229	0.216	0.226	0.245	0.239	0.240	0.258	0.219	0.229	8.85	8.9135
	28	2,2-Dichloropropane	0.601	0.618	0.642	0.499	0.544	0.572	0.493	0.485	0.431	------	0.543	13.02	8.9391
	29	cis-1,2-Dichloroethene	0.488	0.467	0.479	0.404	0.435	0.472	0.434	0.453	0.428	0.410	0.447	6.49	8.9537
5	30	2-Butanol	------	0.044	0.042	0.042	0.040	0.043	0.047	0.043	0.049	0.038	0.043	7.78	9.0650
	31	Bromochloromethane	0.613	0.599	0.580	0.554	0.586	0.609	0.572	0.724	0.568	0.549	0.595	8.39	9.2681
	32	Tetrahydrofuran	------	0.132	0.144	0.122	0.122	0.125	0.130	0.126	0.128	0.118	0.127	5.90	9.3033
	33	Chloroform	1.006	0.918	0.923	0.828	0.846	0.920	0.881	0.889	0.806	0.828	0.884	6.83	9.3098
	34	Dibromofluoromethane	0.403	0.374	0.372	0.357	0.423	0.474	0.440	0.461	0.438	0.430	0.417	9.46	9.5198
	35	1,1,1-Trichloroethane	0.642	0.676	0.652	0.570	0.596	0.625	0.578	0.592	0.542	0.541	0.601	7.67	9.5541
	36	Cyclohexane	0.411	0.377	0.420	0.402	0.431	0.442	0.434	0.428	0.425	0.409	0.418	4.52	9.6122
	37	1,1-Dichloropropene	0.190	0.167	0.171	0.158	0.162	0.173	0.162	0.169	0.147	0.147	0.165	7.70	9.7299
	38	Carbon tetrachloride	0.484	0.509	0.492	0.449	0.472	0.499	0.466	0.484	0.419	0.426	0.470	6.41	9.7582
	39	1,2-Dichloroethane-d4	0.522	0.460	0.449	0.437	0.495	0.570	0.521	0.530	0.527	0.506	0.502	8.31	9.9518
	40	tert-Amyl methyl ether (TAME)	0.257	0.229	0.255	0.240	0.238	0.267	0.245	0.247	0.239	0.220	0.244	5.69	9.9935
	41	Benzene	1.795	1.583	1.629	1.501	1.545	1.640	1.527	1.541	1.391	1.164	1.532	10.88	10.0114
	42	1,2-Dichloroethane	0.630	0.623	0.635	0.608	0.616	0.670	0.650	0.656	0.626	0.575	0.629	4.24	10.0412
	43	Trichloroethene	0.404	0.417	0.399	0.356	0.388	0.417	0.382	0.394	0.369	0.376	0.390	5.14	10.7339
	44	Methylcyclohexane	0.551	0.413	0.473	0.482	0.476	0.532	0.489	0.506	0.482	0.468	0.487	7.68	10.9380
	45	1,2-Dichloropropane	0.537	0.494	0.509	0.444	0.452	0.509	0.476	0.494	0.467	0.432	0.481	6.88	11.0274
20	46	1,4-Dioxane	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	11.89	11.1540
	47	Dibromomethane	0.357	0.338	0.333	0.311	0.331	0.363	0.336	0.355	0.350	0.332	0.341	4.61	11.2181
	48	Bromodichloromethane	0.700	0.726	0.687	0.641	0.685	0.765	0.765	0.758	0.720	0.698	0.715	5.64	11.3372

SG
10/9/15

49	2-Chloroethyl vinyl ether	0.266	0.248	0.275	0.261	0.274	0.288	0.315	0.308	0.302	0.283	0.282	7.60	11.5577
50	cis-1,3-Dichloropropene	0.866	0.867	0.886	0.805	0.817	0.932	0.865	0.920	0.833	0.833	0.863	4.87	11.8169
5 51	4-Methyl-2-pentanone	0.596	0.579	0.587	0.581	0.583	0.606	0.575	0.534	------	------	0.580	3.62	11.8976
52	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8846
53	Toluene-d8	1.170	1.061	1.158	1.064	1.198	1.390	1.200	1.345	1.280	------	1.207	9.43	12.1271
54	Toluene	1.866	1.655	1.749	1.659	1.606	1.740	1.550	1.678	1.478	------	1.664	6.89	12.2148
55	Ethyl methacrylate	0.618	0.549	0.568	0.571	0.565	0.612	0.569	0.585	0.583	0.620	0.584	4.22	12.3785
56	trans-1,3-Dichloropropene	0.782	0.690	0.768	0.735	0.716	0.781	0.759	0.815	0.768	0.810	0.762	5.15	12.4411
57	1,1,2-Trichloroethane	0.420	0.385	0.394	0.377	0.360	0.380	0.360	0.394	0.375	0.399	0.384	4.80	12.6958
5 58	2-Hexanone	0.457	0.384	0.410	0.427	0.426	0.431	0.400	0.396	0.350	------	0.409	7.59	12.8554
59	Tetrachloroethene	0.359	0.338	0.357	0.322	0.318	0.316	0.299	0.320	0.282	0.311	0.322	7.46	12.8776
60	1,3-Dichloropropane	0.723	0.684	0.755	0.742	0.713	0.750	0.711	0.762	0.709	0.740	0.729	3.43	12.9074
61	Dibromochloromethane	0.417	0.423	0.462	0.443	0.447	0.496	0.468	0.494	0.473	0.508	0.463	6.65	13.2291
62	1,2-Dibromoethane	0.441	0.391	0.398	0.399	0.411	0.435	0.403	0.436	0.419	0.432	0.417	4.42	13.4154
63	1-Chlorohexane	0.758	0.714	0.773	0.702	0.707	0.729	0.614	0.697	0.653	0.682	0.703	6.63	13.7148
64	Chlorobenzene	1.121	1.042	1.041	0.987	1.004	1.090	0.972	0.983	0.899	0.978	1.012	6.32	13.9174
65	Ethylbenzene	2.055	2.012	2.153	2.063	2.066	2.208	1.962	1.931	1.560	------	2.001	9.32	13.9478
66	1,1,1,2-Tetrachloroethane	0.423	0.409	0.412	0.404	0.415	0.450	0.406	0.412	0.376	0.392	0.410	4.67	13.9829
2 67	m-Xylene & p-Xylene	1.793	1.685	1.731	1.527	1.563	1.640	1.446	1.294	------	------	1.585	10.28	14.0633
68	o-Xylene	1.832	1.681	1.832	1.656	1.704	1.771	1.608	1.598	1.398	------	1.676	8.08	14.5520
69	Styrene	1.315	1.107	1.219	1.138	1.154	1.226	1.092	1.099	0.953	1.020	1.132	9.23	14.5699
70	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	17.2022
71	Bromoform	0.638	0.565	0.591	0.596	0.594	0.629	0.621	0.736	0.684	0.770	0.642	10.42	14.9319
72	Isopropylbenzene	3.788	3.521	3.585	3.241	3.287	3.377	3.090	3.722	3.085	------	3.411	7.59	14.9376
73	4-Bromofluorobenzene	1.646	1.115	1.119	0.993	1.177	1.215	1.136	1.357	1.216	1.327	1.230	14.66	15.2194
74	1,1,2,2-Tetrachloroethane	1.380	1.316	1.354	1.285	1.251	1.311	1.263	1.418	1.339	1.458	1.338	5.00	15.3445
75	trans-1,4-Dichloro-2-butene	------	0.431	0.334	0.318	0.346	0.360	0.364	0.417	0.399	0.437	0.378	11.58	15.3846
76	n-Propylbenzene	5.510	5.137	5.585	4.800	4.957	5.042	4.651	5.271	4.003	------	4.995	9.64	15.4309
77	1,2,3-Trichloropropane	0.297	0.269	0.298	0.252	0.257	0.262	0.253	0.279	0.257	0.254	0.268	6.64	15.4473
78	Bromobenzene	1.142	1.073	1.068	0.961	0.967	1.015	0.957	1.146	1.003	1.094	1.043	6.92	15.4786
79	1,3,5-Trimethylbenzene	3.053	2.955	3.109	2.734	2.824	2.832	2.595	2.974	2.553	2.598	2.823	7.06	15.5978
80	2-Chlorotoluene	3.601	3.391	3.465	3.106	3.201	3.239	2.977	3.519	3.040	3.070	3.261	6.74	15.6440
81	4-Chlorotoluene	3.300	2.840	3.026	2.901	2.981	2.937	2.776	3.368	2.822	2.829	2.978	6.83	15.7616
82	tert-Butylbenzene	0.705	0.614	0.634	0.566	0.584	0.559	0.517	0.615	0.503	0.553	0.585	10.18	16.0447
83	1,2,4-Trimethylbenzene	3.268	2.921	3.104	2.788	2.897	2.895	2.670	3.041	2.581	2.672	2.884	7.44	16.0998
84	sec-Butylbenzene	3.942	3.841	4.062	3.557	3.743	3.638	3.471	3.799	3.220	------	3.697	6.95	16.3081
85	p-Isopropyltoluene	3.208	2.737	2.925	2.515	2.787	2.724	2.528	2.892	2.412	2.530	2.726	8.85	16.4454
86	1,3-Dichlorobenzene	1.983	1.675	1.652	1.555	1.636	1.693	1.576	1.780	1.545	1.680	1.678	7.68	16.6003
87	1,4-Dichlorobenzene	2.076	1.569	1.654	1.424	1.628	1.633	1.526	1.778	1.540	1.692	1.652	10.77	16.7031
88	n-Butylbenzene	3.386	3.003	3.235	2.904	3.140	3.127	2.837	3.224	2.716	2.818	3.039	7.15	16.9728
89	1,2-Dichlorobenzene	1.846	1.550	1.550	1.437	1.482	1.547	1.447	1.542	1.390	1.507	1.530	8.12	17.2275
90	1,2-Dibromo-3-chloropropane	0.208	0.149	0.173	0.156	0.162	0.169	0.165	0.172	0.176	0.194	0.172	10.18	18.2926
91	1,2,4-Trichlorobenzene	0.717	0.518	0.574	0.542	0.623	0.661	0.609	0.700	0.602	0.705	0.625	11.11	19.4799
92	Hexachlorobutadiene	0.438	0.421	0.436	0.366	0.415	0.416	0.362	0.396	0.340	0.382	0.397	8.45	19.6050
93	Naphthalene	1.771	1.198	1.278	1.197	1.389	1.497	1.416	1.582	1.442	1.597	1.437	12.80	19.9596
94	1,2,3-Trichlorobenzene	0.595	0.447	0.494	0.462	0.518	0.551	0.518	0.569	0.482	0.570	0.521	9.58	20.3633

Spike Amount = Nominal Amount * M
Ave_%RSD : 7.9 Max_%RSD : 18.4

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
11	Acrolein	0.00103	0.04851	0.9994

SA
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Compound List Report 03

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
Total Cpnds : 94

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.37	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	3.96	0.382	A	2	A	B
3	T	Dichlorodifluoromethane	85	4.04	0.389	A	1	A	B
4	T	Chloromethane	50	4.41	0.425	A	1	A	B
5	T	Vinyl chloride	62	4.65	0.448	A	1	A	B
6	T	2-Chloro-1,1,1-trifluoroethane	118	4.80	0.463	A	2	A	B
7	T	Bromomethane	94	5.27	0.509	A	1	A	B
8	T	Chloroethane	64	5.45	0.526	A	2	A	B
9	T	Dichlorofluoromethane	67	5.75	0.555	A	1	A	B
10	T	Trichlorofluoromethane	101	5.81	0.560	A	1	A	B
11	T	Acrolein	56	6.50	0.626	L	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	6.59	0.635	A	1	A	B
13	T	1,1-Dichloroethene	61	6.63	0.639	A	2	A	B
14	T	Acetone	43	6.70	0.647	A	2	A	B
15	T	Iodomethane	142	6.93	0.668	A	1	A	B
16	T	Carbon disulfide	76	7.03	0.678	A	1	A	B
17	T	Methyl acetate	43	7.12	0.687	A	1	A	B
18	T	Methylene chloride	49	7.32	0.705	A	2	A	B
19	T	tert-Butyl alcohol	59	7.38	0.711	A	1	A	B
20	T	tert-Butyl methyl ether (MTBE)	73	7.58	0.731	A	1	A	B
21	T	trans-1,2-Dichloroethene	61	7.66	0.739	A	2	A	B
22	T	Acrylonitrile	53	7.66	0.739	A	2	A	B
23	T	Isopropyl ether (DIPE)	45	8.13	0.784	A	1	A	B
24	T	Vinyl acetate	43	8.18	0.789	A	1	A	B
25	T	1,1-Dichloroethane	63	8.22	0.793	A	2	A	B
26	T	tert-Butyl ethyl ether (ETBE)	59	8.60	0.829	A	1	A	B
27	T	2-Butanone	43	8.91	0.859	A	1	A	B
28	T	2,2-Dichloropropane	77	8.94	0.862	A	2	A	B
29	T	cis-1,2-Dichloroethene	96	8.95	0.864	A	2	A	B
30	T	2-Butanol	45	9.06	0.874	A	1	A	B
31	T	Bromochloromethane	49	9.27	0.894	A	2	A	B
32	T	Tetrahydrofuran	42	9.30	0.897	A	2	A	B
33	T	Chloroform	83	9.31	0.898	A	2	A	B
34	S	Dibromofluoromethane	111	9.52	0.918	A	2	A	B
35	T	1,1,1-Trichloroethane	97	9.55	0.921	A	2	A	B
36	T	Cyclohexane	56	9.61	0.927	A	2	A	B
37	T	1,1-Dichloropropene	110	9.73	0.938	A	1	A	B
38	T	Carbon tetrachloride	119	9.76	0.941	A	1	A	B
39	S	1,2-Dichloroethane-d4	65	9.95	0.960	A	1	A	B
40	T	tert-Amyl methyl ether (TAME)	87	9.98	0.963	A	2	A	B
41	T	Benzene	78	10.01	0.966	A	2	A	B
42	T	1,2-Dichloroethane	62	10.04	0.968	A	1	A	B
43	T	Trichloroethene	130	10.73	1.034	A	3	A	B
44	T	Methylcyclohexane	83	10.94	1.055	A	2	A	B
45	T	1,2-Dichloropropane	63	11.02	1.063	A	2	A	B
46	T	1,4-Dioxane	88	11.14	1.075	A	1	A	B
47	T	Dibromomethane	93	11.22	1.082	A	2	A	B
48	T	Bromodichloromethane	83	11.34	1.093	A	1	A	B
49	T	2-Chloroethyl vinyl ether	63	11.56	1.115	A	1	A	B
50	T	cis-1,3-Dichloropropene	75	11.81	1.139	A	3	A	B
51	T	4-Methyl-2-pentanone	43	11.89	1.147	A	3	A	B
52	I	CHLOROBENZENE-D5	117	13.89	1.000	A	2	A	B

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53	S	Toluene-d8	98	12.13	0.873	A	1	A	B
54	T	Toluene	91	12.22	0.880	A	1	A	B
55	T	Ethyl methacrylate	69	12.38	0.892	A	2	A	B
56	T	trans-1,3-Dichloropropene	75	12.44	0.896	A	2	A	B
57	T	1,1,2-Trichloroethane	97	12.69	0.914	A	3	A	B
58	T	2-Hexanone	43	12.86	0.926	A	2	A	B
59	T	Tetrachloroethene	164	12.87	0.927	A	3	A	B
60	T	1,3-Dichloropropane	76	12.90	0.929	A	1	A	B
61	T	Dibromochloromethane	129	13.23	0.953	A	1	A	B
62	T	1,2-Dibromoethane	107	13.41	0.966	A	1	A	B
63	T	1-Chlorohexane	91	13.71	0.987	A	3	A	B
64	P,M	Chlorobenzene	112	13.91	1.002	A	3	A	B
65	T	Ethylbenzene	91	13.94	1.004	A	1	A	B
66	T	1,1,1,2-Tetrachloroethane	131	13.97	1.006	A	3	A	B
67	T	m-Xylene & p-Xylene	91	14.06	1.013	A	1	A	B
68	T	o-Xylene	91	14.56	1.048	A	1	A	B
69	T	Styrene	104	14.57	1.049	A	2	A	B
70	I	1,2-DICHLOROBENZENE-D4	152	17.19	1.000	A	1	A	B
71	T	Bromoform	173	14.93	0.868	A	2	A	B
72	T	Isopropylbenzene	105	14.93	0.868	A	3	A	B
73	S	4-Bromofluorobenzene	95	15.21	0.885	A	2	A	B
74	T	1,1,2,2-Tetrachloroethane	83	15.35	0.893	A	1	A	B
75	T	trans-1,4-Dichloro-2-butene	53	15.37	0.894	A	1	A	B
76	T	n-Propylbenzene	91	15.43	0.898	A	2	A	B
77	T	1,2,3-Trichloropropane	110	15.45	0.899	A	1	A	B
78	T	Bromobenzene	156	15.48	0.900	A	2	A	B
79	T	1,3,5-Trimethylbenzene	105	15.60	0.907	A	2	A	B
80	T	2-Chlorotoluene	91	15.64	0.910	A	1	A	B
81	T	4-Chlorotoluene	91	15.76	0.917	A	1	A	B
82	T	tert-Butylbenzene	134	16.05	0.933	A	2	A	B
83	T	1,2,4-Trimethylbenzene	105	16.09	0.936	A	1	A	B
84	T	sec-Butylbenzene	105	16.30	0.948	A	1	A	B
85	T	p-Isopropyltoluene	119	16.45	0.957	A	2	A	B
86	T	1,3-Dichlorobenzene	146	16.60	0.965	A	2	A	B
87	T	1,4-Dichlorobenzene	146	16.70	0.971	A	2	A	B
88	T	n-Butylbenzene	91	16.97	0.987	A	2	A	B
89	T	1,2-Dichlorobenzene	146	17.22	1.002	A	2	A	B
90	T	1,2-Dibromo-3-chloropropane	157	18.29	1.064	A	2	A	B
91	T	1,2,4-Trichlorobenzene	180	19.47	1.133	A	2	A	B
92	T	Hexachlorobutadiene	225	19.61	1.140	A	2	A	B
93	T	Naphthalene	128	19.96	1.161	A	1	A	B
94	T	1,2,3-Trichlorobenzene	180	20.35	1.184	A	2	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

VO03I25.M Wed Oct 07 21:19:11 2015

Sw
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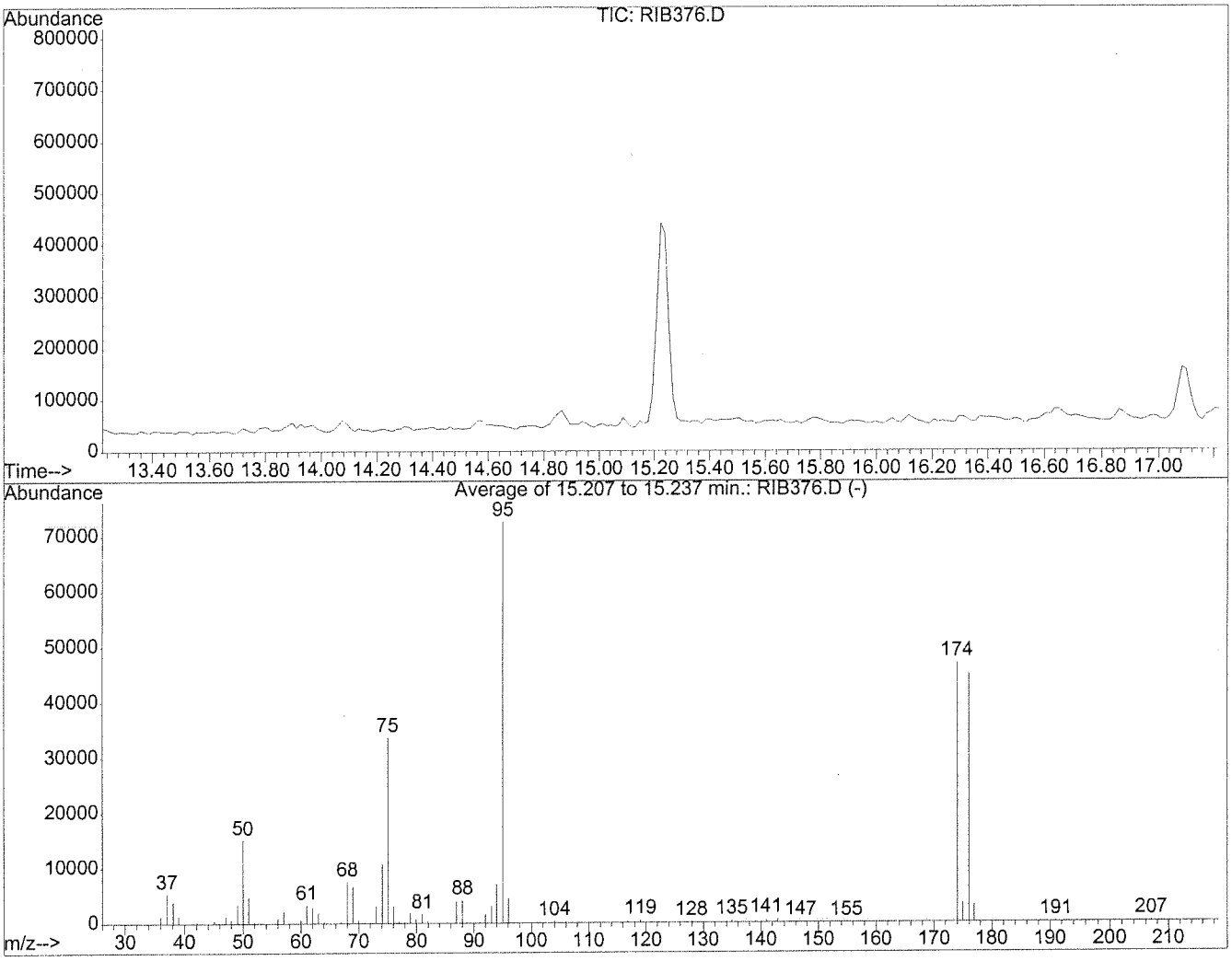
BFB

Data File : D:\HPCHEM\1\DATA\15I24\RIB376.D
Acq On : 24 Sep 2015 10:24 pm
Sample : BFB03I16
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL

Vial: 1
Operator: CMendo
Inst : 03
Multiplr: 1.00



AutoFind: Scans 764, 765, 766; Background Corrected with Scan 760

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.9	15162	PASS
75	95	30	60	46.5	33744	PASS
95	95	100	100	100.0	72638	PASS
96	95	5	9	6.2	4496	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	64.7	47011	PASS
175	174	5	9	7.3	3427	PASS
176	174	95	101	95.8	45035	PASS
177	176	5	9	6.8	3072	PASS

RIB376.D VO03I25.M Wed Oct 07 21:13:18 2015

Sw 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB377.D Vial: 2
Acq On : 24 Sep 2015 10:55 pm Operator: CMendo
Sample : VO03I251 Inst : 03
Misc : 1.0ppb 8260/5.0ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1643525	50.00 ug/l	0.00
52) CHLOROBENZENE-D5	13.88	117	1709876	50.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.20	152	869076	50.00 ug/l	0.01
System Monitoring Compounds					
34) Dibromofluoromethane	9.52	111	13250	0.97 ug/l	0.00
Spiked Amount 50.000			Recovery	= 1.94%	
39) 1,2-Dichloroethane-d4	9.95	65	17143	1.04 ug/l	0.00
Spiked Amount 50.000			Recovery	= 2.08%	
53) Toluene-d8	12.12	98	40027	0.97 ug/l	0.00
Spiked Amount 50.000			Recovery	= 1.94%	
73) 4-Bromofluorobenzene	15.22	95	28617	1.34 ug/l	0.01
Spiked Amount 50.000			Recovery	= 2.68%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.98	116	2644	0.79 ug/l #	32
3) Dichlorodifluoromethane	4.02	85	12110	1.24 ug/l	90
4) Chloromethane	4.41	50	11318	1.05 ug/l	97
5) Vinyl chloride	4.63	62	8446	1.00 ug/l	91
6) 2-Chloro-1,1,1-trifluoroet	4.79	118	3096	0.66 ug/l #	54
7) Bromomethane	5.27	94	10752	1.22 ug/l	91
8) Chloroethane	5.44	64	5980	1.11 ug/l	88
9) Dichlorofluoromethane	5.75	67	28667	1.17 ug/l	76
10) Trichlorofluoromethane	5.82	101	13449	0.97 ug/l	94
11) Acrolein	6.51	56	10768	5.69 ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	6.57	151	6410	1.03 ug/l	95
13) 1,1-Dichloroethene	6.63	61	19901	1.01 ug/l	90
14) Acetone	6.70	43	31847	6.70 ug/l	88
15) Iodomethane	6.92	142	23929	1.01 ug/l	98
16) Carbon disulfide	7.03	76	41783	0.88 ug/l	95
17) Methyl acetate	7.13	43	9473	0.97 ug/l	99
18) Methylene chloride	7.31	49	59762	2.52 ug/l	99
19) tert-Butyl alcohol	7.37	59	8530	6.02 ug/l	93
20) tert-Butyl methyl ether (M	7.60	73	35765	1.04 ug/l	85
21) trans-1,2-Dichloroethene	7.67	61	21076	1.04 ug/l	95
22) Acrylonitrile	7.67	53	17972	4.51 ug/l	86
23) Isopropyl ether (DIPE)	8.13	45	52821	0.98 ug/l	97
24) Vinyl acetate	8.19	43	24567	0.69 ug/l #	86
25) 1,1-Dichloroethane	8.22	63	28806	1.08 ug/l	96
26) tert-Butyl ethyl ether (ET	8.59	59	44652	1.00 ug/l	99
27) 2-Butanone	8.92	43	30111	4.01 ug/l	92
28) 2,2-Dichloropropane	8.94	77	19744	1.11 ug/l	84

(#) = qualifier out of range (m) = manual integration
RIB377.D VO03I25.M Wed Oct 07 21:13:24 2015 S 10/9/15 Page 1

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB377.D Vial: 2
Acq On : 24 Sep 2015 10:55 pm Operator: CMendo
Sample : VO03I251 Inst : 03
Misc : 1.0ppb 8260/5.0ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
29)	cis-1,2-Dichloroethene	8.95	96	16044	1.09 ug/l		93
30)	2-Butanol	9.05	45	8621	6.11 ug/l		94
31)	Bromochloromethane	9.26	49	20134	1.03 ug/l		94
32)	Tetrahydrofuran	9.31	42	4135	0.99 ug/l		86
33)	Chloroform	9.31	83	33078	1.14 ug/l		94
35)	1,1,1-Trichloroethane	9.56	97	21095	1.07 ug/l		97
36)	Cyclohexane	9.61	56	13524	0.98 ug/l		93
37)	1,1-Dichloropropene	9.73	110	6234	1.15 ug/l		92
38)	Carbon tetrachloride	9.76	119	15905	1.03 ug/l		100
40)	tert-Amyl methyl ether (TA	9.99	87	8432	1.05 ug/l		90
41)	Benzene	10.01	78	59018	1.17 ug/l		96
42)	1,2-Dichloroethane	10.04	62	20713	1.00 ug/l		97
43)	Trichloroethene	10.74	130	13285	1.04 ug/l		85
44)	Methylcyclohexane	10.93	83	18110	1.13 ug/l		89
45)	1,2-Dichloropropane	11.04	63	17641	1.12 ug/l	#	36
46)	1,4-Dioxane	11.17	88	3606	26.13 ug/l	#	56
47)	Dibromomethane	11.22	93	11740	1.05 ug/l		90
48)	Bromodichloromethane	11.33	83	23000	0.98 ug/l		99
49)	2-Chloroethyl vinyl ether	11.56	63	8732	0.94 ug/l		63
50)	cis-1,3-Dichloropropene	11.83	75	28473	1.00 ug/l		95
51)	4-Methyl-2-pentanone	11.90	43	97916	5.14 ug/l		99
54)	Toluene	12.21	91	63798	1.12 ug/l		97
55)	Ethyl methacrylate	12.38	69	21133	1.06 ug/l		98
56)	trans-1,3-Dichloropropene	12.45	75	26733	1.03 ug/l		94
57)	1,1,2-Trichloroethane	12.69	97	14379	1.09 ug/l		92
58)	2-Hexanone	12.85	43	78091	5.58 ug/l		98
59)	Tetrachloroethene	12.87	164	12285	1.11 ug/l		96
60)	1,3-Dichloropropane	12.91	76	24717	0.99 ug/l		81
61)	Dibromochloromethane	13.23	129	14269	0.90 ug/l		91
62)	1,2-Dibromoethane	13.42	107	15091	1.06 ug/l		97
63)	1-Chlorohexane	13.72	91	25920	1.08 ug/l		91
64)	Chlorobenzene	13.91	112	38322	1.11 ug/l	#	59
65)	Ethylbenzene	13.96	91	70281	1.03 ug/l		93
66)	1,1,1,2-Tetrachloroethane	13.99	131	14458	1.03 ug/l	#	77
67)	m-Xylene & p-Xylene	14.06	91	122662	2.26 ug/l		99
68)	o-Xylene	14.55	91	62647	1.09 ug/l		96
69)	Styrene	14.57	104	44968	1.16 ug/l		95
71)	Bromoform	14.94	173	11087	0.99 ug/l		95
72)	Isopropylbenzene	14.94	105	65839	1.11 ug/l		95
74)	1,1,2,2-Tetrachloroethane	15.34	83	23992	1.03 ug/l		92
75)	trans-1,4-Dichloro-2-buten	15.39	53	10499	1.60 ug/l		68

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

SC 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB377.D
Acq On : 24 Sep 2015 10:55 pm
Sample : VO03I251
Misc : 1.0ppb 8260/5.0ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015

Vial: 2
Operator: CMendo
Inst : 03
Multiplr: 1.00

Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
76)	n-Propylbenzene	15.43	91	95768	1.10 ug/l		96
77)	1,2,3-Trichloropropane	15.45	110	5165	1.11 ug/l		85
78)	Bromobenzene	15.48	156	19858	1.10 ug/l		88
79)	1,3,5-Trimethylbenzene	15.59	105	53059	1.08 ug/l		96
80)	2-Chlorotoluene	15.64	91	62592	1.10 ug/l		99
81)	4-Chlorotoluene	15.76	91	57352	1.11 ug/l		98
82)	tert-Butylbenzene	16.04	134	12256	1.21 ug/l	#	83
83)	1,2,4-Trimethylbenzene	16.10	105	56811	1.13 ug/l		92
84)	sec-Butylbenzene	16.31	105	68526	1.07 ug/l		97
85)	p-Isopropyltoluene	16.44	119	55754	1.18 ug/l		96
86)	1,3-Dichlorobenzene	16.61	146	34470	1.18 ug/l		98
87)	1,4-Dichlorobenzene	16.71	146	36078	1.26 ug/l		98
88)	n-Butylbenzene	16.98	91	58860	1.11 ug/l		96
89)	1,2-Dichlorobenzene	17.23	146	32080	1.21 ug/l	#	67
90)	1,2-Dibromo-3-chloropropan	18.29	157	3607	1.20 ug/l		90
91)	1,2,4-Trichlorobenzene	19.48	180	12460	1.15 ug/l		97
92)	Hexachlorobutadiene	19.60	225	7617	1.10 ug/l		92
93)	Naphthalene	19.96	128	30790	1.23 ug/l		100
94)	1,2,3-Trichlorobenzene	20.36	180	10349	1.14 ug/l		94

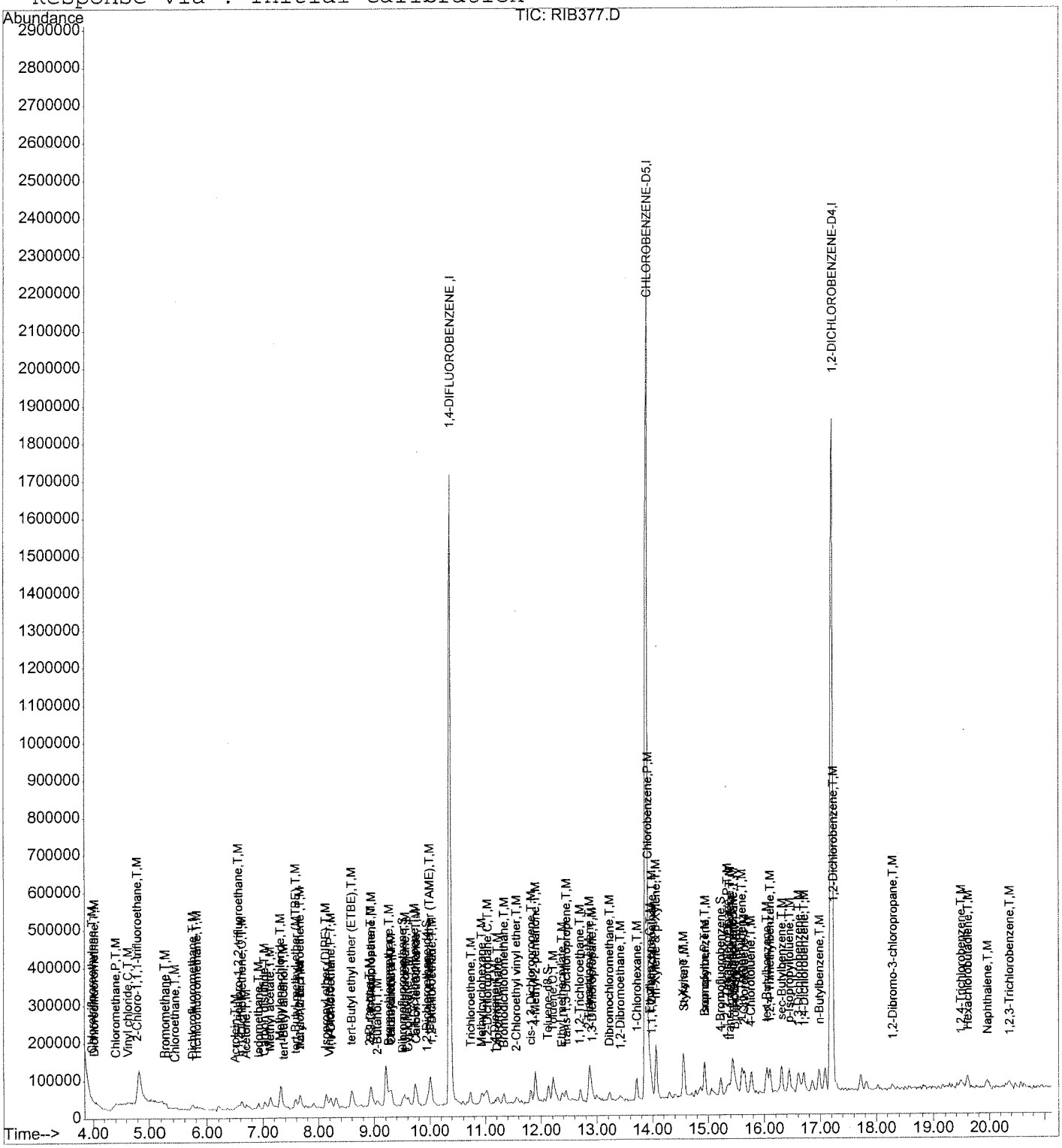
Sw 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB377.D Vial: 2
Acq On : 24 Sep 2015 10:55 pm Operator: CMendo
Sample : VO03I251 Inst : 03
Misc : 1.0ppb 8260/5.0ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB378.D Vial: 3
Acq On : 24 Sep 2015 11:23 pm Operator: CMendo
Sample : VO03I252 Inst : 03
Misc : 2.0ppb 8260/10ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1824007	50.00 ug/l	0.00
52) CHLOROBENZENE-D5	13.89	117	1958210	50.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.20	152	942909	50.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	9.52	111	27251	1.79 ug/l	0.00
Spiked Amount 50.000			Recovery	= 3.58%	
39) 1,2-Dichloroethane-d4	9.96	65	33530	1.83 ug/l	0.00
Spiked Amount 50.000			Recovery	= 3.66%	
53) Toluene-d8	12.13	98	83121	1.76 ug/l	0.00
Spiked Amount 50.000			Recovery	= 3.52%	
73) 4-Bromofluorobenzene	15.21	95	42072	1.81 ug/l	0.00
Spiked Amount 50.000			Recovery	= 3.62%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.97	116	4998	1.35 ug/l #	78
3) Dichlorodifluoromethane	4.04	85	15692	1.45 ug/l	70
4) Chloromethane	4.40	50	23217	1.95 ug/l	99
5) Vinyl chloride	4.64	62	16856	1.79 ug/l	86
6) 2-Chloro-1,1,1-trifluoroet	4.80	118	8337	1.61 ug/l	92
7) Bromomethane	5.29	94	17936	1.84 ug/l	96
8) Chloroethane	5.44	64	11901	2.00 ug/l	89
9) Dichlorofluoromethane	5.75	67	59413	2.19 ug/l	86
10) Trichlorofluoromethane	5.81	101	27015	1.75 ug/l	100
11) Acrolein	6.51	56	25148	13.15 ug/l	83
12) 1,1,2-Trichloro-1,2,2-trif	6.59	151	15341	2.23 ug/l	95
13) 1,1-Dichloroethene	6.63	61	43551	1.99 ug/l	94
14) Acetone	6.72	43	60377	11.45 ug/l	93
15) Iodomethane	6.93	142	52238	1.98 ug/l	99
16) Carbon disulfide	7.04	76	95342	1.80 ug/l	96
17) Methyl acetate	7.13	43	14519	1.34 ug/l	97
18) Methylene chloride	7.32	49	86346	3.28 ug/l	94
19) tert-Butyl alcohol	7.38	59	15894	10.11 ug/l	72
20) tert-Butyl methyl ether (M	7.60	73	76511	2.01 ug/l	96
21) trans-1,2-Dichloroethene	7.68	61	46064	2.05 ug/l	94
22) Acrylonitrile	7.68	53	43747	9.90 ug/l	93
23) Isopropyl ether (DIPE)	8.14	45	116437	1.95 ug/l	99
24) Vinyl acetate	8.20	43	47748	1.21 ug/l	97
25) 1,1-Dichloroethane	8.23	63	58389	1.97 ug/l	93
26) tert-Butyl ethyl ether (ET	8.59	59	94415	1.91 ug/l	98
27) 2-Butanone	8.93	43	84079	10.08 ug/l	98
28) 2,2-Dichloropropane	8.94	77	45088	2.28 ug/l	95

(#) = qualifier out of range (m) = manual integration SU 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB378.D Vial: 3
Acq On : 24 Sep 2015 11:23 pm Operator: CMendo
Sample : VO03I252 Inst : 03
Misc : 2.0ppb 8260/10ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.96	96	34088	2.09 ug/l	97
30)	2-Butanol	9.08	45	16074	10.27 ug/l	84
31)	Bromochloromethane	9.27	49	43672	2.01 ug/l	96
32)	Tetrahydrofuran	9.32	42	9610	2.07 ug/l	87
33)	Chloroform	9.32	83	66999	2.08 ug/l	97
35)	1,1,1-Trichloroethane	9.55	97	49326	2.25 ug/l	95
36)	Cyclohexane	9.61	56	27538	1.81 ug/l	97
37)	1,1-Dichloropropene	9.73	110	12152	2.02 ug/l	96
38)	Carbon tetrachloride	9.76	119	37114	2.16 ug/l	96
40)	tert-Amyl methyl ether (TA	10.00	87	16717	1.88 ug/l	91
41)	Benzene	10.02	78	115516	2.07 ug/l	99
42)	1,2-Dichloroethane	10.05	62	45486	1.98 ug/l	93
43)	Trichloroethene	10.75	130	30414	2.14 ug/l	95
44)	Methylcyclohexane	10.94	83	30168	1.70 ug/l	95
45)	1,2-Dichloropropane	11.03	63	36021	2.05 ug/l	94
46)	1,4-Dioxane	11.16	88	6232	40.69 ug/l	66
47)	Dibromomethane	11.22	93	24689	1.99 ug/l	95
48)	Bromodichloromethane	11.34	83	52933	2.03 ug/l	95
49)	2-Chloroethyl vinyl ether	11.56	63	18103	1.76 ug/l	87
50)	cis-1,3-Dichloropropene	11.82	75	63266	2.01 ug/l	98
51)	4-Methyl-2-pentanone	11.91	43	211162	9.98 ug/l	99
54)	Toluene	12.22	91	129597	1.99 ug/l	99
55)	Ethyl methacrylate	12.38	69	42977	1.88 ug/l	98
56)	trans-1,3-Dichloropropene	12.44	75	54079	1.81 ug/l	89
57)	1,1,2-Trichloroethane	12.70	97	30151	2.00 ug/l	96
58)	2-Hexanone	12.86	43	150488	9.40 ug/l	98
59)	Tetrachloroethene	12.88	164	26512	2.10 ug/l	96
60)	1,3-Dichloropropane	12.91	76	53550	1.88 ug/l	91
61)	Dibromochloromethane	13.23	129	33103	1.83 ug/l	99
62)	1,2-Dibromoethane	13.41	107	30609	1.88 ug/l	98
63)	1-Chlorohexane	13.71	91	55910	2.03 ug/l	97
64)	Chlorobenzene	13.92	112	81604	2.06 ug/l	79
65)	Ethylbenzene	13.95	91	157631	2.01 ug/l	97
66)	1,1,1,2-Tetrachloroethane	13.98	131	32006	1.99 ug/l	95
67)	m-Xylene & p-Xylene	14.07	91	263948	4.25 ug/l	98
68)	o-Xylene	14.54	91	131667	2.01 ug/l	98
69)	Styrene	14.57	104	86737	1.96 ug/l	96
71)	Bromoform	14.93	173	21325	1.76 ug/l	95
72)	Isopropylbenzene	14.93	105	132785	2.06 ug/l	97
74)	1,1,2,2-Tetrachloroethane	15.35	83	49628	1.97 ug/l	99
75)	trans-1,4-Dichloro-2-buten	15.39	53	16269	2.28 ug/l	84

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

SU
10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB378.D Vial: 3
Acq On : 24 Sep 2015 11:23 pm Operator: CMendo
Sample : VO03I252 Inst : 03
Misc : 2.0ppb 8260/10ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
76)	n-Propylbenzene	15.42	91	193749	2.06 ug/l		99
77)	1,2,3-Trichloropropane	15.45	110	10161	2.01 ug/l		85
78)	Bromobenzene	15.48	156	40457	2.06 ug/l		96
79)	1,3,5-Trimethylbenzene	15.60	105	111468	2.09 ug/l		99
80)	2-Chlorotoluene	15.65	91	127911	2.08 ug/l		100
81)	4-Chlorotoluene	15.77	91	107109	1.91 ug/l		98
82)	tert-Butylbenzene	16.05	134	23167	2.10 ug/l	#	87
83)	1,2,4-Trimethylbenzene	16.09	105	110173	2.03 ug/l		94
84)	sec-Butylbenzene	16.30	105	144863	2.08 ug/l		99
85)	p-Isopropyltoluene	16.44	119	103240	2.01 ug/l		97
86)	1,3-Dichlorobenzene	16.60	146	63193	2.00 ug/l		99
87)	1,4-Dichlorobenzene	16.70	146	59195	1.90 ug/l		93
88)	n-Butylbenzene	16.97	91	113273	1.98 ug/l		99
89)	1,2-Dichlorobenzene	17.23	146	58470	2.03 ug/l		83
90)	1,2-Dibromo-3-chloropropan	18.30	157	5601	1.72 ug/l		90
91)	1,2,4-Trichlorobenzene	19.47	180	19551	1.66 ug/l		95
92)	Hexachlorobutadiene	19.61	225	15882	2.12 ug/l		93
93)	Naphthalene	19.95	128	45199	1.67 ug/l		94
94)	1,2,3-Trichlorobenzene	20.37	180	16846	1.72 ug/l		98

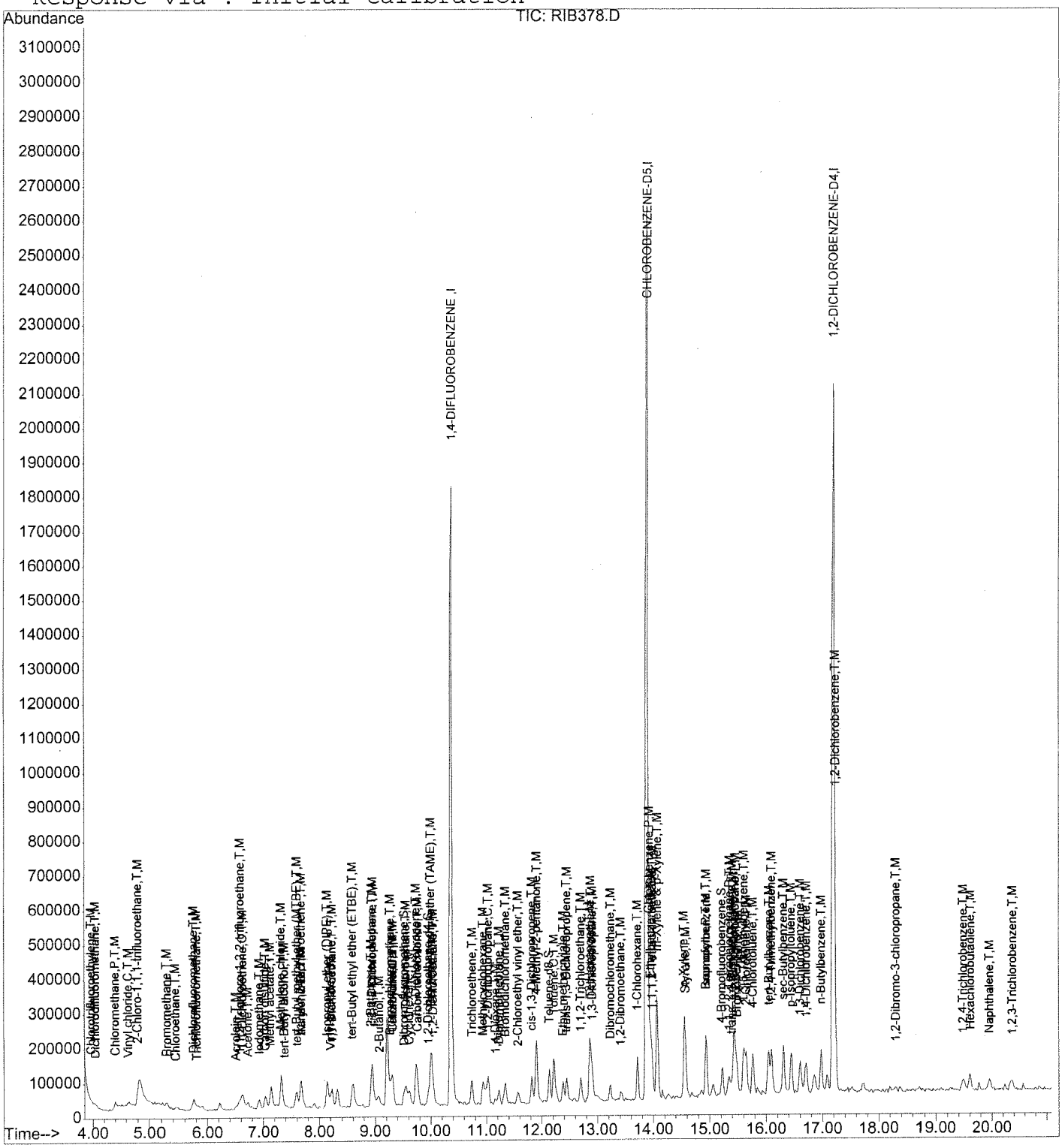
Su 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB378.D Vial: 3
Acq On : 24 Sep 2015 11:23 pm Operator: CMendo
Sample : VO03I252 Inst : 03
Misc : 2.0ppb 8260/10ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:08 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



Sm 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB379.D Vial: 4
Acq On : 24 Sep 2015 11:51 pm Operator: CMendo
Sample : VO03I253 Inst : 03
Misc : 4.0ppb 8260/20ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1831230	50.00 ug/l	0.00
52) CHLOROBENZENE-D5	13.88	117	1863323	50.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.20	152	922854	50.00 ug/l	0.01
System Monitoring Compounds					
34) Dibromofluoromethane	9.52	111	54436	3.56 ug/l	0.00
Spiked Amount 50.000			Recovery	= 7.12%	
39) 1,2-Dichloroethane-d4	9.95	65	65842	3.58 ug/l	0.00
Spiked Amount 50.000			Recovery	= 7.16%	
53) Toluene-d8	12.12	98	172659	3.84 ug/l	0.00
Spiked Amount 50.000			Recovery	= 7.68%	
73) 4-Bromofluorobenzene	15.22	95	82588	3.64 ug/l	0.01
Spiked Amount 50.000			Recovery	= 7.28%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.96	116	13976	3.75 ug/l	83
3) Dichlorodifluoromethane	4.04	85	43685	4.01 ug/l	100
4) Chloromethane	4.41	50	48474	4.05 ug/l	100
5) Vinyl chloride	4.63	62	37039	3.92 ug/l	85
6) 2-Chloro-1,1,1-trifluoroet	4.81	118	18548	3.56 ug/l	86
7) Bromomethane	5.29	94	45636	4.66 ug/l	90
8) Chloroethane	5.45	64	24977	4.18 ug/l	90
9) Dichlorofluoromethane	5.75	67	123655	4.55 ug/l	94
10) Trichlorofluoromethane	5.82	101	63523	4.10 ug/l	100
11) Acrolein	6.51	56	28938	15.23 ug/l	95
12) 1,1,2-Trichloro-1,2,2-trif	6.58	151	29362	4.25 ug/l	99
13) 1,1-Dichloroethene	6.63	61	94798	4.32 ug/l	98
14) Acetone	6.72	43	108460	20.49 ug/l	96
15) Iodomethane	6.93	142	107463	4.05 ug/l	100
16) Carbon disulfide	7.04	76	224863	4.23 ug/l	100
17) Methyl acetate	7.12	43	35344	3.25 ug/l	96
18) Methylene chloride	7.33	49	137011	5.18 ug/l	98
19) tert-Butyl alcohol	7.37	59	31974	20.26 ug/l	91
20) tert-Butyl methyl ether (M	7.60	73	149838	3.91 ug/l	98
21) trans-1,2-Dichloroethene	7.67	61	95475	4.23 ug/l	98
22) Acrylonitrile	7.67	53	83324	18.78 ug/l	93
23) Isopropyl ether (DIPE)	8.13	45	246675	4.11 ug/l	97
24) Vinyl acetate	8.19	43	119596	3.01 ug/l	97
25) 1,1-Dichloroethane	8.22	63	122313	4.11 ug/l	98
26) tert-Butyl ethyl ether (ET	8.59	59	196991	3.98 ug/l	96
27) 2-Butanone	8.92	43	168103	20.07 ug/l	100
28) 2,2-Dichloropropane	8.94	77	94040	4.73 ug/l	98

(#) = qualifier out of range (m) = manual integration
RIB379.D VO03I25.M Wed Oct 07 21:13:38 2015

SW 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB379.D
Acq On : 24 Sep 2015 11:51 pm
Sample : VO03I253
Misc : 4.0ppb 8260/20ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015

Vial: 4
Operator: CMendo
Inst : 03
Multiplr: 1.00
Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.95	96	70100	4.28 ug/l	100
30)	2-Butanol	9.06	45	30673	19.51 ug/l	90
31)	Bromochloromethane	9.26	49	85024	3.90 ug/l	99
32)	Tetrahydrofuran	9.31	42	21067	4.52 ug/l	97
33)	Chloroform	9.31	83	135157	4.17 ug/l	98
35)	1,1,1-Trichloroethane	9.56	97	95540	4.34 ug/l	94
36)	Cyclohexane	9.62	56	61499	4.02 ug/l	98
37)	1,1-Dichloropropene	9.74	110	24999	4.15 ug/l	98
38)	Carbon tetrachloride	9.76	119	72123	4.19 ug/l	99
40)	tert-Amyl methyl ether (TA	9.99	87	37371	4.19 ug/l	96
41)	Benzene	10.01	78	238698	4.25 ug/l	99
42)	1,2-Dichloroethane	10.04	62	93052	4.04 ug/l	98
43)	Trichloroethene	10.74	130	58474	4.09 ug/l	97
44)	Methylcyclohexane	10.95	83	69282	3.88 ug/l	95
45)	1,2-Dichloropropane	11.04	63	74618	4.23 ug/l	92
46)	1,4-Dioxane	11.16	88	12428	80.82 ug/l	83
47)	Dibromomethane	11.22	93	48836	3.92 ug/l	97
48)	Bromodichloromethane	11.33	83	100615	3.84 ug/l	94
49)	2-Chloroethyl vinyl ether	11.56	63	40308	3.90 ug/l	92
50)	cis-1,3-Dichloropropene	11.83	75	129831	4.11 ug/l	97
51)	4-Methyl-2-pentanone	11.90	43	429721	20.23 ug/l	99
54)	Toluene	12.21	91	260736	4.20 ug/l	100
55)	Ethyl methacrylate	12.38	69	84697	3.89 ug/l	92
56)	trans-1,3-Dichloropropene	12.44	75	114485	4.03 ug/l	97
57)	1,1,2-Trichloroethane	12.71	97	58717	4.10 ug/l	98
58)	2-Hexanone	12.85	43	305677	20.06 ug/l	98
59)	Tetrachloroethene	12.88	164	53182	4.43 ug/l	96
60)	1,3-Dichloropropane	12.91	76	112482	4.14 ug/l	96
61)	Dibromochloromethane	13.23	129	68845	3.99 ug/l	96
62)	1,2-Dibromoethane	13.42	107	59364	3.82 ug/l	98
63)	1-Chlorohexane	13.72	91	115205	4.40 ug/l	97
64)	Chlorobenzene	13.91	112	155203	4.12 ug/l	89
65)	Ethylbenzene	13.96	91	320968	4.30 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.99	131	61355	4.02 ug/l	94
67)	m-Xylene & p-Xylene	14.06	91	515969	8.74 ug/l	99
68)	o-Xylene	14.55	91	273103	4.37 ug/l	99
69)	Styrene	14.57	104	181731	4.31 ug/l	97
71)	Bromoform	14.92	173	43621	3.68 ug/l	98
72)	Isopropylbenzene	14.94	105	264689	4.20 ug/l	98
74)	1,1,2,2-Tetrachloroethane	15.34	83	99994	4.05 ug/l	98
75)	trans-1,4-Dichloro-2-buten	15.39	53	24623	3.53 ug/l	98

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

Sa 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB379.D
Acq On : 24 Sep 2015 11:51 pm
Sample : VO03I253
Misc : 4.0ppb 8260/20ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015

Vial: 4
Operator: CMendo
Inst : 03
Multiplr: 1.00
Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	n-Propylbenzene	15.43	91	412347	4.47 ug/l	99
77)	1,2,3-Trichloropropane	15.45	110	21993	4.45 ug/l	97
78)	Bromobenzene	15.48	156	78815	4.10 ug/l	91
79)	1,3,5-Trimethylbenzene	15.60	105	229499	4.41 ug/l	99
80)	2-Chlorotoluene	15.64	91	255779	4.25 ug/l	100
81)	4-Chlorotoluene	15.76	91	223377	4.06 ug/l	100
82)	tert-Butylbenzene	16.04	134	46793	4.33 ug/l	92
83)	1,2,4-Trimethylbenzene	16.10	105	229161	4.31 ug/l	97
84)	sec-Butylbenzene	16.31	105	299898	4.40 ug/l	100
85)	p-Isopropyltoluene	16.44	119	215958	4.29 ug/l	99
86)	1,3-Dichlorobenzene	16.61	146	121989	3.94 ug/l	99
87)	1,4-Dichlorobenzene	16.70	146	122134	4.01 ug/l	98
88)	n-Butylbenzene	16.98	91	238809	4.26 ug/l	98
89)	1,2-Dichlorobenzene	17.22	146	114462	4.05 ug/l	92
90)	1,2-Dibromo-3-chloropropan	18.29	157	12794	4.02 ug/l	95
91)	1,2,4-Trichlorobenzene	19.48	180	42361	3.67 ug/l	95
92)	Hexachlorobutadiene	19.60	225	32174	4.39 ug/l	99
93)	Naphthalene	19.96	128	94330	3.56 ug/l	98
94)	1,2,3-Trichlorobenzene	20.36	180	36451	3.79 ug/l	97

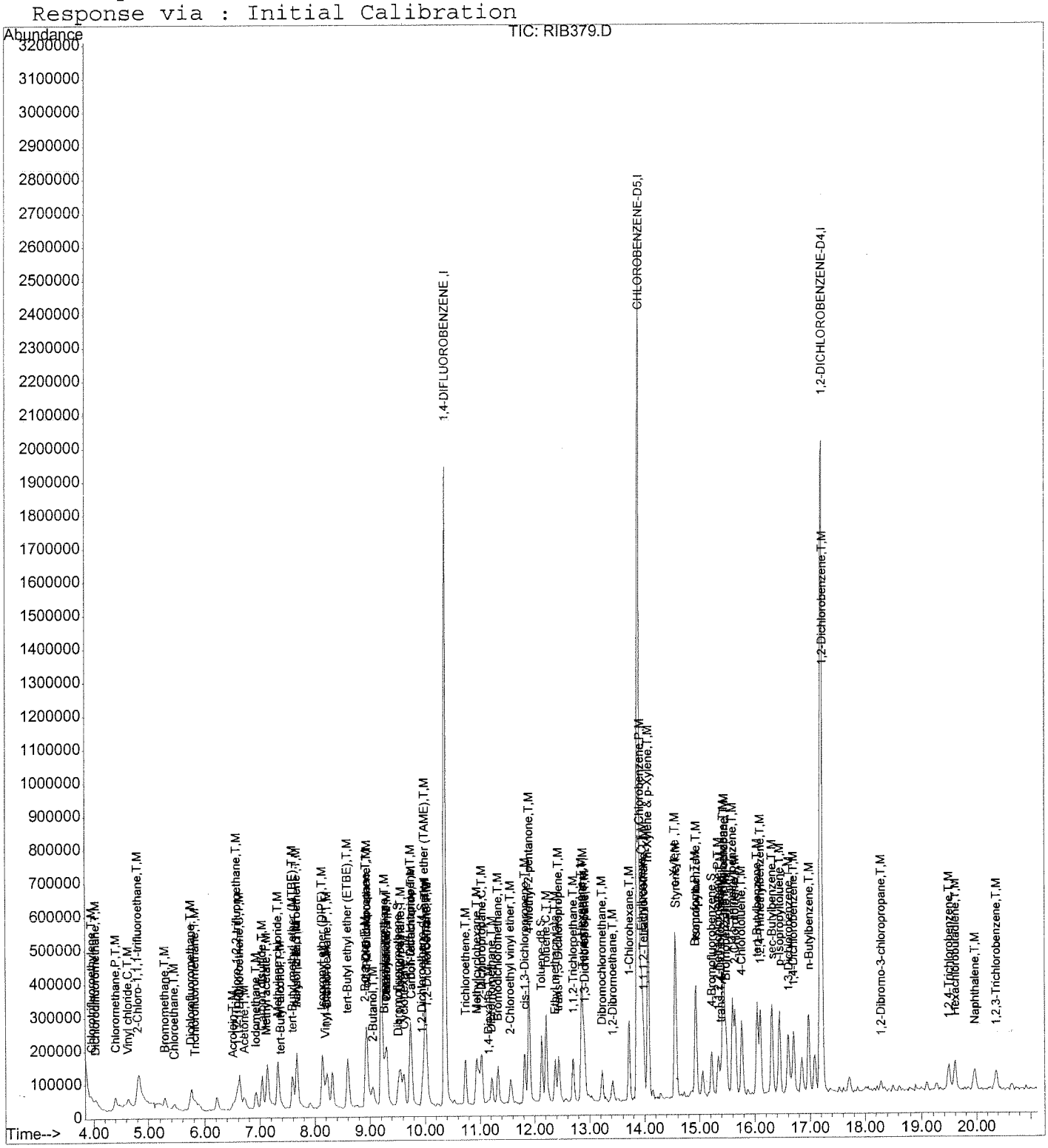
Su 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB379.D Vial: 4
Acq On : 24 Sep 2015 11:51 pm Operator: CMendo
Sample : VO03I253 Inst : 03
Misc : 4.0ppb 8260/20ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB380.D Vial: 5
Acq On : 25 Sep 2015 12:19 am Operator: CMendo
Sample : VO03I254 Inst : 03
Misc : 10ppb 8260/50ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1942669	50.00	ug/l	0.00
52) CHLOROBENZENE-D5	13.89	117	1898605	50.00	ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.19	152	953791	50.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	9.52	111	138861	8.57	ug/l	0.00
Spiked Amount 50.000			Recovery	=	17.14%	
39) 1,2-Dichloroethane-d4	9.95	65	169800	8.71	ug/l	0.00
Spiked Amount 50.000			Recovery	=	17.42%	
53) Toluene-d8	12.13	98	403911	8.81	ug/l	0.00
Spiked Amount 50.000			Recovery	=	17.62%	
73) 4-Bromofluorobenzene	15.21	95	189394	8.07	ug/l	0.00
Spiked Amount 50.000			Recovery	=	16.14%	
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.97	116	39558	10.00	ug/l	87
3) Dichlorodifluoromethane	4.04	85	101237	8.77	ug/l	97
4) Chloromethane	4.41	50	124617	9.81	ug/l	100
5) Vinyl chloride	4.65	62	98826	9.87	ug/l	100
6) 2-Chloro-1,1,1-trifluoroet	4.80	118	52491	9.50	ug/l	95
7) Bromomethane	5.29	94	109731	10.57	ug/l	98
8) Chloroethane	5.46	64	64583	10.18	ug/l	97
9) Dichlorofluoromethane	5.75	67	265147	9.19	ug/l	97
10) Trichlorofluoromethane	5.83	101	159185	9.69	ug/l	99
11) Acrolein	6.50	56	87909	45.58	ug/l	90
12) 1,1,2-Trichloro-1,2,2-trif	6.59	151	67620	9.24	ug/l	100
13) 1,1-Dichloroethene	6.63	61	219317	9.42	ug/l	97
14) Acetone	6.71	43	251403	44.77	ug/l	97
15) Iodomethane	6.93	142	264749	9.41	ug/l	99
16) Carbon disulfide	7.05	76	570533	10.12	ug/l	100
17) Methyl acetate	7.12	43	123102	10.67	ug/l	99
18) Methylene chloride	7.32	49	288259	10.27	ug/l	95
19) tert-Butyl alcohol	7.38	59	76841	45.91	ug/l	78
20) tert-Butyl methyl ether (M	7.59	73	380320	9.36	ug/l	100
21) trans-1,2-Dichloroethene	7.66	61	218626	9.12	ug/l	99
22) Acrylonitrile	7.66	53	213311	45.31	ug/l	96
23) Isopropyl ether (DIPE)	8.14	45	572771	8.99	ug/l	100
24) Vinyl acetate	8.18	43	385331	9.15	ug/l	99
25) 1,1-Dichloroethane	8.23	63	297545	9.42	ug/l	100
26) tert-Butyl ethyl ether (ET	8.60	59	487118	9.27	ug/l	100
27) 2-Butanone	8.91	43	419468	47.21	ug/l	98
28) 2,2-Dichloropropane	8.94	77	193964	9.20	ug/l	100

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

Sa 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB380.D
Acq On : 25 Sep 2015 12:19 am
Sample : VO03I254
Misc : 10ppb 8260/50ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015

Vial: 5
Operator: CMendo
Inst : 03
Multiplr: 1.00
Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) cis-1,2-Dichloroethene	8.96	96	157153	9.05 ug/l	96
30) 2-Butanol	9.06	45	81208	48.70 ug/l	92
31) Bromochloromethane	9.27	49	215111	9.30 ug/l	98
32) Tetrahydrofuran	9.30	42	47531	9.61 ug/l	93
33) Chloroform	9.30	83	321662	9.36 ug/l	98
35) 1,1,1-Trichloroethane	9.55	97	221484	9.48 ug/l	98
36) Cyclohexane	9.61	56	156018	9.61 ug/l	98
37) 1,1-Dichloropropene	9.73	110	61216	9.58 ug/l	98
38) Carbon tetrachloride	9.76	119	174293	9.54 ug/l	99
40) tert-Amyl methyl ether (TA	9.98	87	93384	9.87 ug/l	99
41) Benzene	10.01	78	583154	9.80 ug/l	100
42) 1,2-Dichloroethane	10.04	62	236357	9.67 ug/l	100
43) Trichloroethene	10.73	130	138184	9.12 ug/l	99
44) Methylcyclohexane	10.94	83	187164	9.89 ug/l	99
45) 1,2-Dichloropropane	11.03	63	172418	9.22 ug/l	80
46) 1,4-Dioxane	11.15	88	30891	189.36 ug/l	95
47) Dibromomethane	11.22	93	120715	9.12 ug/l	97
48) Bromodichloromethane	11.34	83	249232	8.98 ug/l	99
49) 2-Chloroethyl vinyl ether	11.56	63	101578	9.27 ug/l	95
50) cis-1,3-Dichloropropene	11.82	75	312758	9.33 ug/l	99
51) 4-Methyl-2-pentanone	11.89	43	1129561	50.12 ug/l	99
54) Toluene	12.20	91	629820	9.97 ug/l	100
55) Ethyl methacrylate	12.38	69	216737	9.77 ug/l	100
56) trans-1,3-Dichloropropene	12.44	75	279233	9.65 ug/l	99
57) 1,1,2-Trichloroethane	12.70	97	143030	9.80 ug/l	99
58) 2-Hexanone	12.86	43	810849	52.21 ug/l	98
59) Tetrachloroethene	12.87	164	122273	9.99 ug/l	99
60) 1,3-Dichloropropane	12.90	76	281733	10.18 ug/l	98
61) Dibromochloromethane	13.23	129	168194	9.57 ug/l	99
62) 1,2-Dibromoethane	13.41	107	151645	9.59 ug/l	99
63) 1-Chlorohexane	13.71	91	266555	9.99 ug/l	100
64) Chlorobenzene	13.92	112	374917	9.76 ug/l	95
65) Ethylbenzene	13.95	91	783343	10.31 ug/l	99
66) 1,1,1,2-Tetrachloroethane	13.98	131	153323	9.85 ug/l	98
67) m-Xylene & p-Xylene	14.07	91	1159289	19.26 ug/l	100
68) o-Xylene	14.54	91	628811	9.88 ug/l	100
69) Styrene	14.57	104	431985	10.05 ug/l	99
71) Bromoform	14.93	173	113634	9.27 ug/l	99
72) Isopropylbenzene	14.93	105	618224	9.50 ug/l	99
74) 1,1,2,2-Tetrachloroethane	15.35	83	245053	9.60 ug/l	99
75) trans-1,4-Dichloro-2-buten	15.38	53	60718	8.41 ug/l	100

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

10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB380.D Vial: 5
Acq On : 25 Sep 2015 12:19 am Operator: CMendo
Sample : VO03I254 Inst : 03
Misc : 10ppb 8260/50ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	n-Propylbenzene	15.42	91	915677	9.61 ug/l	100
77)	1,2,3-Trichloropropane	15.44	110	48013	9.40 ug/l	93
78)	Bromobenzene	15.48	156	183342	9.22 ug/l	89
79)	1,3,5-Trimethylbenzene	15.60	105	521599	9.69 ug/l	99
80)	2-Chlorotoluene	15.64	91	592553	9.53 ug/l	99
81)	4-Chlorotoluene	15.76	91	553375	9.74 ug/l	99
82)	tert-Butylbenzene	16.05	134	108030	9.68 ug/l	96
83)	1,2,4-Trimethylbenzene	16.09	105	531905	9.67 ug/l	100
84)	sec-Butylbenzene	16.30	105	678443	9.62 ug/l	100
85)	p-Isopropyltoluene	16.45	119	479739	9.23 ug/l	98
86)	1,3-Dichlorobenzene	16.60	146	296536	9.27 ug/l	99
87)	1,4-Dichlorobenzene	16.70	146	271656	8.62 ug/l	98
88)	n-Butylbenzene	16.97	91	553984	9.56 ug/l	99
89)	1,2-Dichlorobenzene	17.22	146	274156	9.39 ug/l	97
90)	1,2-Dibromo-3-chloropropan	18.28	157	29670	9.03 ug/l	99
91)	1,2,4-Trichlorobenzene	19.47	180	103412	8.67 ug/l	99
92)	Hexachlorobutadiene	19.61	225	69843	9.22 ug/l	99
93)	Naphthalene	19.95	128	228428	8.33 ug/l	100
94)	1,2,3-Trichlorobenzene	20.37	180	88163	8.88 ug/l	98

Sa 10/9/15

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

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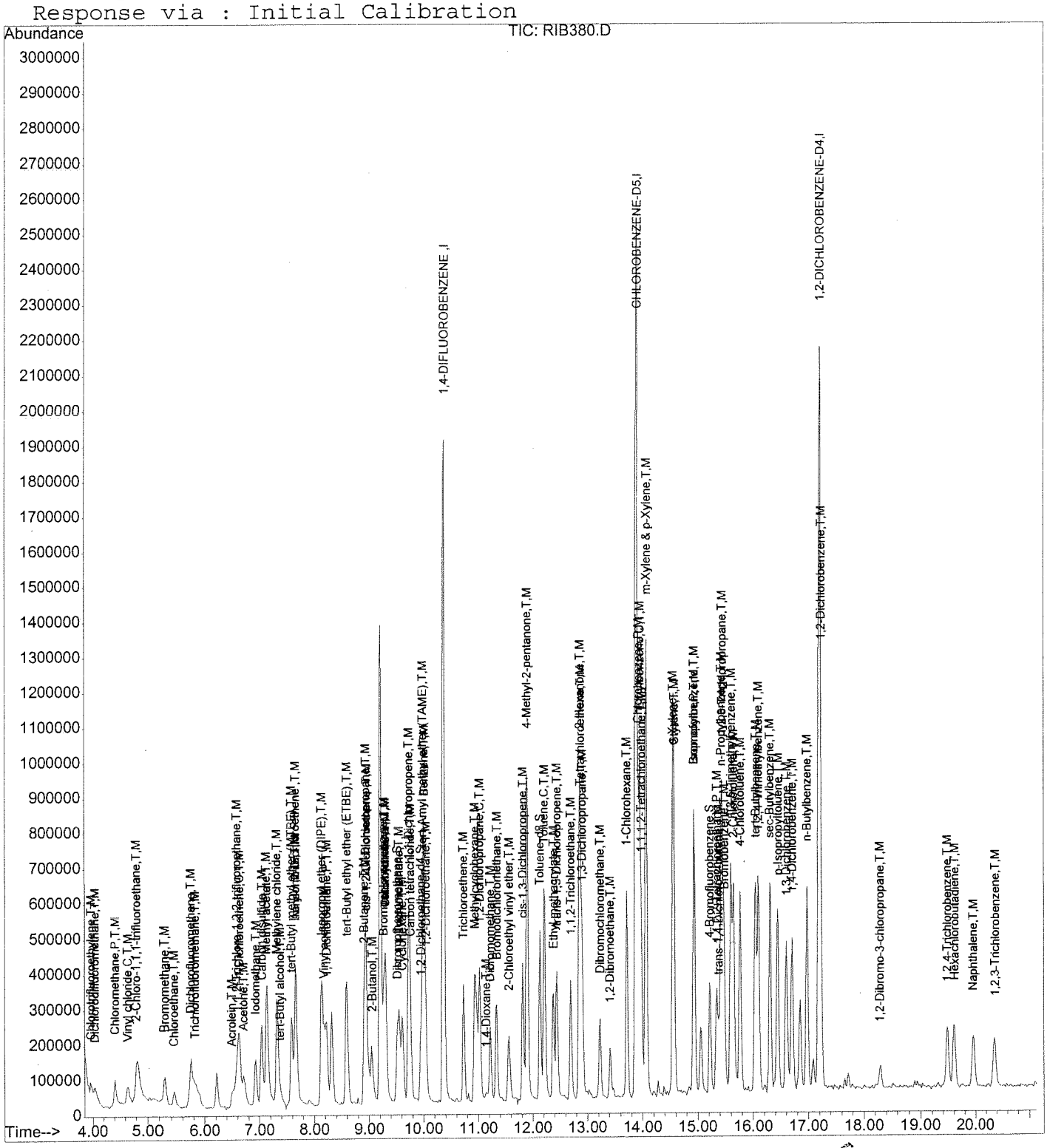
Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB380.D Vial: 5
Acq On : 25 Sep 2015 12:19 am Operator: CMendo
Sample : VO03I254 Inst : 03
Misc : 10ppb 8260/50ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



Sa 10/9/15 348

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB381.D Vial: 6
Acq On : 25 Sep 2015 12:48 am Operator: CMendo
Sample : VO03I255 Inst : 03
Misc : 20ppb 8260/100ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1878456	50.00 ug/l	0.00
52) CHLOROBENZENE-D5	13.88	117	1921544	50.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.20	152	979469	50.00 ug/l	0.01
System Monitoring Compounds					
34) Dibromofluoromethane	9.52	111	317867	20.29 ug/l	0.00
Spiked Amount 50.000			Recovery =	40.58%	
39) 1,2-Dichloroethane-d4	9.95	65	372054	19.74 ug/l	0.00
Spiked Amount 50.000			Recovery =	39.48%	
53) Toluene-d8	12.12	98	920446	19.84 ug/l	0.00
Spiked Amount 50.000			Recovery =	39.68%	
73) 4-Bromofluorobenzene	15.22	95	461324	19.14 ug/l	0.01
Spiked Amount 50.000			Recovery =	38.28%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.98	116	76824	20.08 ug/l	95
3) Dichlorodifluoromethane	4.04	85	223206	20.00 ug/l	99
4) Chloromethane	4.41	50	240237	19.57 ug/l	97
5) Vinyl chloride	4.65	62	200801	20.74 ug/l	99
6) 2-Chloro-1,1,1-trifluoroet	4.81	118	103829	19.43 ug/l	95
7) Bromomethane	5.29	94	206463	20.56 ug/l	99
8) Chloroethane	5.45	64	138183	22.52 ug/l	97
9) Dichlorofluoromethane	5.75	67	555304	19.90 ug/l	99
10) Trichlorofluoromethane	5.82	101	341310	21.50 ug/l	100
11) Acrolein	6.51	56	169985	92.21 ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	6.58	151	139715	19.74 ug/l	100
13) 1,1-Dichloroethene	6.63	61	435359	19.33 ug/l	99
14) Acetone	6.72	43	461861	85.06 ug/l	96
15) Iodomethane	6.93	142	529558	19.46 ug/l	99
16) Carbon disulfide	7.04	76	1139503	20.91 ug/l	100
17) Methyl acetate	7.12	43	230349	20.66 ug/l	100
18) Methylene chloride	7.31	49	516329	19.02 ug/l	97
19) tert-Butyl alcohol	7.37	59	153305	94.72 ug/l	97
20) tert-Butyl methyl ether (M	7.60	73	772393	19.66 ug/l	99
21) trans-1,2-Dichloroethene	7.67	61	472396	20.38 ug/l	99
22) Acrylonitrile	7.66	53	440888	96.86 ug/l	97
23) Isopropyl ether (DIPE)	8.13	45	1232185	19.99 ug/l	98
24) Vinyl acetate	8.18	43	859462	21.10 ug/l	99
25) 1,1-Dichloroethane	8.22	63	608761	19.92 ug/l	99
26) tert-Butyl ethyl ether (ET	8.59	59	1026335	20.20 ug/l	100
27) 2-Butanone	8.91	43	849490	98.88 ug/l	99
28) 2,2-Dichloropropane	8.94	77	408672	20.04 ug/l	100

(#) = qualifier out of range (m) = manual integration
RIB381.D VO03I25.M Wed Oct 07 21:13:51 2015

Sa 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB381.D Vial: 6
Acq On : 25 Sep 2015 12:48 am Operator: CMendo
Sample : VO03I255 Inst : 03
Misc : 20ppb 8260/100ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
29)	cis-1,2-Dichloroethene	8.95	96	327032	19.47 ug/l		100
30)	2-Butanol	9.06	45	150667	93.44 ug/l		99
31)	Bromochloromethane	9.26	49	440124	19.68 ug/l		95
32)	Tetrahydrofuran	9.31	42	91352	19.10 ug/l		98
33)	Chloroform	9.31	83	635679	19.13 ug/l		100
35)	1,1,1-Trichloroethane	9.56	97	447740	19.81 ug/l		97
36)	Cyclohexane	9.62	56	323986	20.63 ug/l		99
37)	1,1-Dichloropropene	9.73	110	121942	19.73 ug/l		99
38)	Carbon tetrachloride	9.76	119	354583	20.08 ug/l		99
40)	tert-Amyl methyl ether (TA	9.99	87	178587	19.51 ug/l		97
41)	Benzene	10.01	78	1161076	20.18 ug/l		98
42)	1,2-Dichloroethane	10.04	62	462848	19.59 ug/l		99
43)	Trichloroethene	10.74	130	291324	19.87 ug/l		99
44)	Methylcyclohexane	10.95	83	357398	19.52 ug/l		99
45)	1,2-Dichloropropane	11.02	63	339288	18.76 ug/l		91
46)	1,4-Dioxane	11.16	88	55950	354.69 ug/l		95
47)	Dibromomethane	11.22	93	248501	19.42 ug/l		98
48)	Bromodichloromethane	11.33	83	515015	19.19 ug/l		100
49)	2-Chloroethyl vinyl ether	11.56	63	206100	19.45 ug/l		100
50)	cis-1,3-Dichloropropene	11.81	75	613529	18.93 ug/l	#	75
51)	4-Methyl-2-pentanone	11.90	43	2189565	100.47 ug/l		99
54)	Toluene	12.21	91	1234092	19.29 ug/l		100
55)	Ethyl methacrylate	12.38	69	434346	19.35 ug/l		98
56)	trans-1,3-Dichloropropene	12.44	75	550322	18.78 ug/l		98
57)	1,1,2-Trichloroethane	12.69	97	276547	18.73 ug/l		99
58)	2-Hexanone	12.85	43	1635809	104.08 ug/l		98
59)	Tetrachloroethene	12.88	164	244662	19.76 ug/l		99
60)	1,3-Dichloropropane	12.91	76	547772	19.56 ug/l		98
61)	Dibromochloromethane	13.23	129	343638	19.31 ug/l		100
62)	1,2-Dibromoethane	13.42	107	315986	19.74 ug/l		97
63)	1-Chlorohexane	13.72	91	543037	20.10 ug/l		99
64)	Chlorobenzene	13.93	112	771395	19.84 ug/l		98
65)	Ethylbenzene	13.94	91	1587926	20.65 ug/l		100
66)	1,1,1,2-Tetrachloroethane	13.99	131	318703	20.24 ug/l		100
67)	m-Xylene & p-Xylene	14.06	91	2402034	39.44 ug/l		99
68)	o-Xylene	14.55	91	1309710	20.34 ug/l		100
69)	Styrene	14.57	104	887036	20.38 ug/l		97
71)	Bromoform	14.94	173	232829	18.50 ug/l		99
72)	Isopropylbenzene	14.94	105	1287888	19.28 ug/l		100
74)	1,1,2,2-Tetrachloroethane	15.34	83	490130	18.71 ug/l		98
75)	trans-1,4-Dichloro-2-buten	15.39	53	135497	18.28 ug/l		98

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

10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB381.D Vial: 6
Acq On : 25 Sep 2015 12:48 am Operator: CMendo
Sample : VO03I255 Inst : 03
Misc : 20ppb 8260/100ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76) n-Propylbenzene	15.43	91	1941920	19.85 ug/l	99
77) 1,2,3-Trichloropropane	15.45	110	100507	19.17 ug/l	100
78) Bromobenzene	15.48	156	378791	18.55 ug/l	89
79) 1,3,5-Trimethylbenzene	15.60	105	1106244	20.01 ug/l	99
80) 2-Chlorotoluene	15.64	91	1254153	19.63 ug/l	100
81) 4-Chlorotoluene	15.76	91	1167916	20.02 ug/l	98
82) tert-Butylbenzene	16.04	134	228691	19.96 ug/l	96
83) 1,2,4-Trimethylbenzene	16.10	105	1134821	20.09 ug/l	91
84) sec-Butylbenzene	16.31	105	1466302	20.25 ug/l	100
85) p-Isopropyltoluene	16.44	119	1092043	20.45 ug/l	99
86) 1,3-Dichlorobenzene	16.59	146	640921	19.50 ug/l	99
87) 1,4-Dichlorobenzene	16.70	146	637812	19.71 ug/l	99
88) n-Butylbenzene	16.97	91	1230191	20.66 ug/l	99
89) 1,2-Dichlorobenzene	17.22	146	580811	19.38 ug/l	99
90) 1,2-Dibromo-3-chloropropan	18.29	157	63403	18.79 ug/l	99
91) 1,2,4-Trichlorobenzene	19.48	180	243972	19.92 ug/l	100
92) Hexachlorobutadiene	19.60	225	162459	20.88 ug/l	98
93) Naphthalene	19.96	128	544213	19.34 ug/l	100
94) 1,2,3-Trichlorobenzene	20.36	180	203080	19.91 ug/l	98

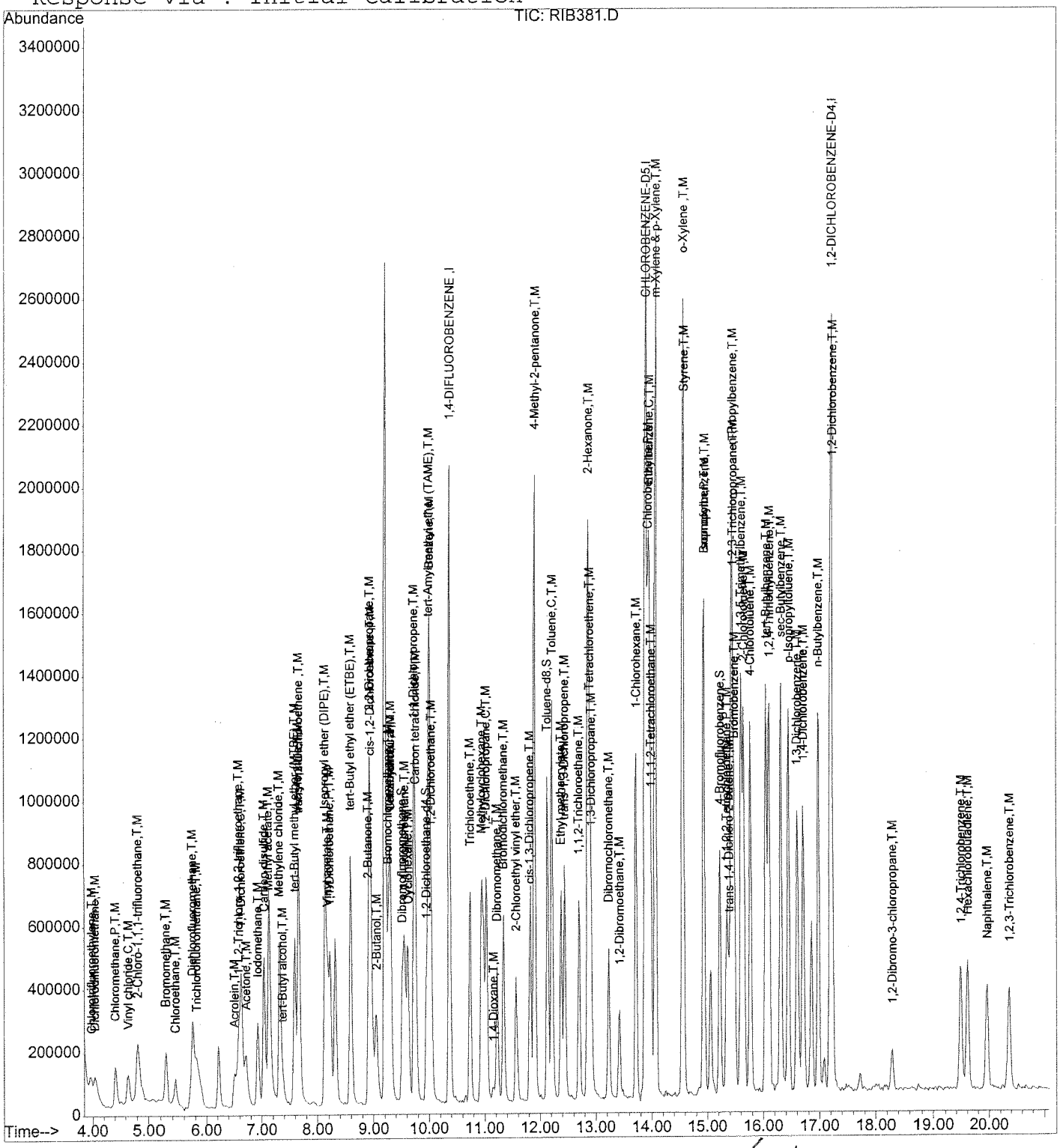
(#) = qualifier out of range (m) = manual integration
RIB381.D VO03I25.M Wed Oct 07 21:13:52 2015

Sa 10/9/15

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB381.D Vial: 6
Acq On : 25 Sep 2015 12:48 am Operator: CMendo
Sample : VO03I255 Inst : 03
Misc : 20ppb 8260/100ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



SG 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB382.D Vial: 7
Acq On : 25 Sep 2015 1:16 am Operator: CMendo
Sample : VO03I256 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1767389	50.00 ug/l	0.00
52) CHLOROBENZENE-D5	13.89	117	1796606	50.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.19	152	962172	50.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	9.52	111	837783	56.83 ug/l	0.00
Spiked Amount 50.000			Recovery	= 113.66%	
39) 1,2-Dichloroethane-d4	9.95	65	1008176	56.86 ug/l	0.00
Spiked Amount 50.000			Recovery	= 113.72%	
53) Toluene-d8	12.13	98	2497818	57.57 ug/l	0.00
Spiked Amount 50.000			Recovery	= 115.14%	
73) 4-Bromofluorobenzene	15.21	95	1169153	49.38 ug/l	0.00
Spiked Amount 50.000			Recovery	= 98.76%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.96	116	191833	53.30 ug/l	100
3) Dichlorodifluoromethane	4.04	85	539292	51.35 ug/l	100
4) Chloromethane	4.41	50	614606	53.20 ug/l	100
5) Vinyl chloride	4.65	62	483561	53.09 ug/l	100
6) 2-Chloro-1,1,1-trifluoroet	4.80	118	268999	53.50 ug/l	100
7) Bromomethane	5.27	94	461125	48.82 ug/l	100
8) Chloroethane	5.45	64	274588	47.56 ug/l	100
9) Dichlorofluoromethane	5.75	67	1348742	51.38 ug/l	100
10) Trichlorofluoromethane	5.81	101	774953	51.88 ug/l	100
11) Acrolein	6.50	56	421378	244.69 ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	6.59	151	356003	53.45 ug/l	100
13) 1,1-Dichloroethene	6.63	61	1143033	53.95 ug/l	100
14) Acetone	6.70	43	1210646	236.97 ug/l	100
15) Iodomethane	6.93	142	1344710	52.53 ug/l	100
16) Carbon disulfide	7.03	76	2847384	55.54 ug/l	100
17) Methyl acetate	7.12	43	565093	53.86 ug/l	100
18) Methylene chloride	7.32	49	1272641	49.82 ug/l	100
19) tert-Butyl alcohol	7.38	59	379870	249.46 ug/l	100
20) tert-Butyl methyl ether (M	7.58	73	1920033	51.95 ug/l	100
21) trans-1,2-Dichloroethene	7.66	61	1178659	54.04 ug/l	100
22) Acrylonitrile	7.66	53	1166134	272.29 ug/l	100
23) Isopropyl ether (DIPE)	8.13	45	3047385	52.55 ug/l	100
24) Vinyl acetate	8.18	43	1956986	51.07 ug/l	100
25) 1,1-Dichloroethane	8.22	63	1500915	52.21 ug/l	100
26) tert-Butyl ethyl ether (ET	8.60	59	2523408	52.79 ug/l	100
27) 2-Butanone	8.91	43	2168247	268.26 ug/l	100
28) 2,2-Dichloropropane	8.94	77	1011358	52.72 ug/l	100

(#) = qualifier out of range (m) = manual integration
RIB382.D VO03I25.M Wed Oct 07 21:13:58 2015 SW 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB382.D Vial: 7
Acq On : 25 Sep 2015 1:16 am Operator: CMendo
Sample : VO03I256 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.95	96	834516	52.81	ug/l	100
30)	2-Butanol	9.06	45	376737	248.31	ug/l	100
31)	Bromochloromethane	9.27	49	1075533	51.12	ug/l	100
32)	Tetrahydrofuran	9.30	42	220086	48.90	ug/l	100
33)	Chloroform	9.31	83	1626016	52.01	ug/l	100
35)	1,1,1-Trichloroethane	9.55	97	1105449	52.00	ug/l	100
36)	Cyclohexane	9.61	56	780972	52.86	ug/l	100
37)	1,1-Dichloropropene	9.73	110	306271	52.67	ug/l	100
38)	Carbon tetrachloride	9.76	119	881517	53.06	ug/l	100
40)	tert-Amyl methyl ether (TA	9.98	87	472765	54.90	ug/l	100
41)	Benzene	10.01	78	2899028	53.54	ug/l	100
42)	1,2-Dichloroethane	10.04	62	1183461	53.23	ug/l	100
43)	Trichloroethene	10.73	130	736883	53.43	ug/l	100
44)	Methylcyclohexane	10.94	83	940231	54.59	ug/l	100
45)	1,2-Dichloropropane	11.02	63	899069	52.84	ug/l	100
46)	1,4-Dioxane	11.14	88	150083	1011.23	ug/l	100
47)	Dibromomethane	11.22	93	641260	53.26	ug/l	100
48)	Bromodichloromethane	11.34	83	1352923	53.57	ug/l	100
49)	2-Chloroethyl vinyl ether	11.56	63	509542	51.10	ug/l	100
50)	cis-1,3-Dichloropropene	11.81	75	1647416	54.03	ug/l	100
51)	4-Methyl-2-pentanone	11.89	43	5355223	261.17	ug/l	100
54)	Toluene	12.22	91	3125913	52.27	ug/l	100
55)	Ethyl methacrylate	12.38	69	1100183	52.43	ug/l	100
56)	trans-1,3-Dichloropropene	12.44	75	1402513	51.20	ug/l	100
57)	1,1,2-Trichloroethane	12.69	97	682170	49.41	ug/l	100
58)	2-Hexanone	12.86	43	3872515	263.53	ug/l	100
59)	Tetrachloroethene	12.87	164	567468	49.01	ug/l	100
60)	1,3-Dichloropropane	12.90	76	1348179	51.48	ug/l	100
61)	Dibromochloromethane	13.23	129	891373	53.58	ug/l	100
62)	1,2-Dibromoethane	13.41	107	781089	52.19	ug/l	100
63)	1-Chlorohexane	13.71	91	1309557	51.85	ug/l	100
64)	Chlorobenzene	13.91	112	1958137	53.87	ug/l	100
65)	Ethylbenzene	13.94	91	3967554	55.18	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.97	131	807937	54.88	ug/l	100
67)	m-Xylene & p-Xylene	14.06	91	5894080	103.51	ug/l	100
68)	o-Xylene	14.56	91	3182101	52.85	ug/l	100
69)	Styrene	14.57	104	2203143	54.15	ug/l	100
71)	Bromoform	14.93	173	605002	48.95	ug/l	100
72)	Isopropylbenzene	14.93	105	3249464	49.51	ug/l	100
74)	1,1,2,2-Tetrachloroethane	15.35	83	1261809	49.02	ug/l	100
75)	trans-1,4-Dichloro-2-buten	15.37	53	346072	47.53	ug/l	100

(#) = qualifier out of range (m) = manual integration SU 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB382.D Vial: 7
Acq On : 25 Sep 2015 1:16 am Operator: CMendo
Sample : VO03I256 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	n-Propylbenzene	15.43	91	4851045	50.47 ug/l	100
77)	1,2,3-Trichloropropane	15.45	110	251640	48.85 ug/l	100
78)	Bromobenzene	15.48	156	976395	48.67 ug/l	100
79)	1,3,5-Trimethylbenzene	15.60	105	2725314	50.17 ug/l	100
80)	2-Chlorotoluene	15.64	91	3116348	49.66 ug/l	100
81)	4-Chlorotoluene	15.76	91	2825622	49.31 ug/l	100
82)	tert-Butylbenzene	16.05	134	537963	47.79 ug/l	100
83)	1,2,4-Trimethylbenzene	16.09	105	2785149	50.19 ug/l	100
84)	sec-Butylbenzene	16.30	105	3500067	49.20 ug/l	100
85)	p-Isopropyltoluene	16.45	119	2621322	49.97 ug/l	100
86)	1,3-Dichlorobenzene	16.60	146	1629313	50.47 ug/l	100
87)	1,4-Dichlorobenzene	16.70	146	1570985	49.42 ug/l	100
88)	n-Butylbenzene	16.97	91	3008652	51.45 ug/l	100
89)	1,2-Dichlorobenzene	17.22	146	1488751	50.57 ug/l	100
90)	1,2-Dibromo-3-chloropropan	18.29	157	162182	48.93 ug/l	100
91)	1,2,4-Trichlorobenzene	19.47	180	636417	52.90 ug/l	100
92)	Hexachlorobutadiene	19.61	225	400496	52.40 ug/l	100
93)	Naphthalene	19.96	128	1440454	52.10 ug/l	100
94)	1,2,3-Trichlorobenzene	20.35	180	529952	52.89 ug/l	100

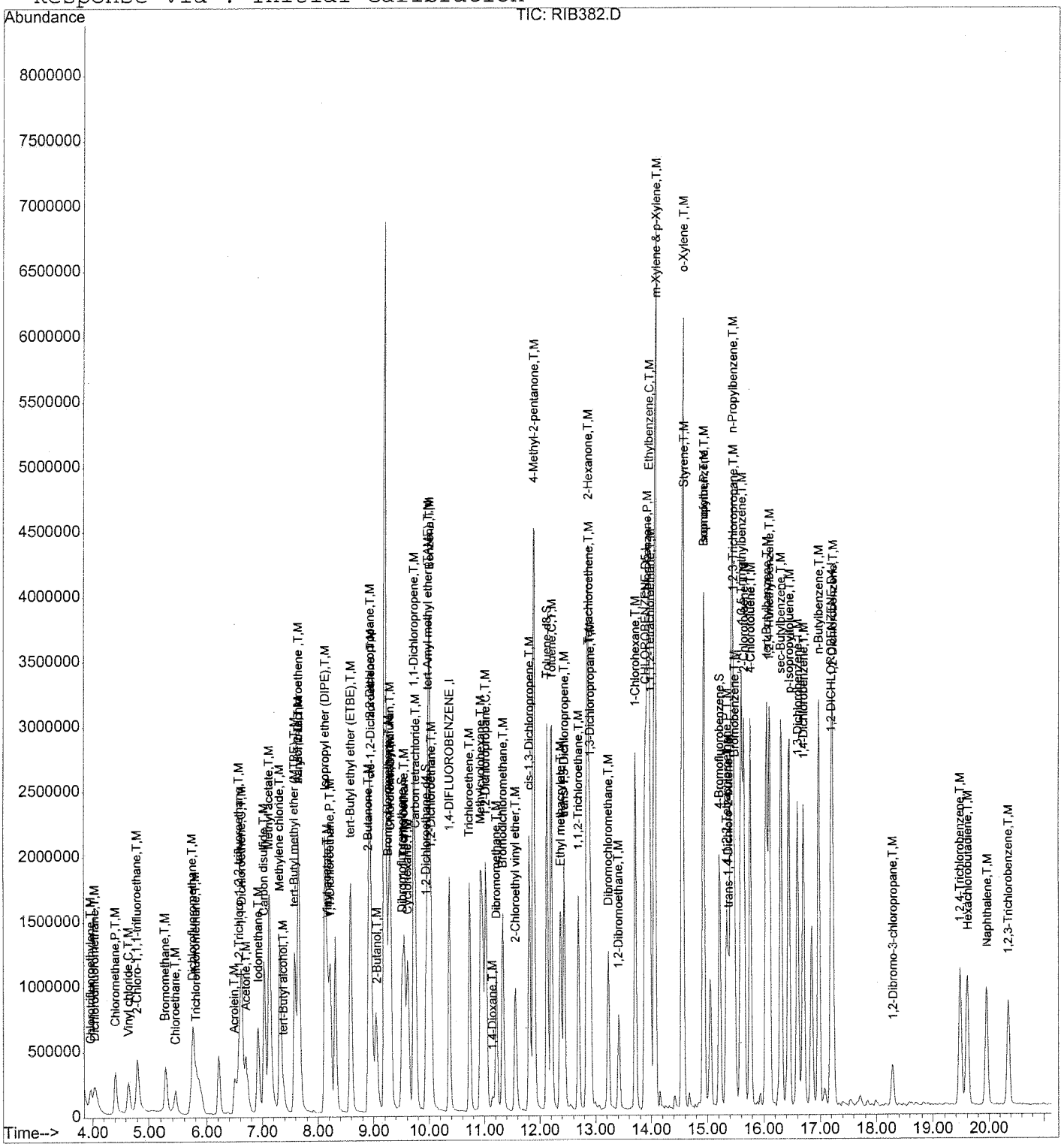
Su 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB382.D Vial: 7
Acq On : 25 Sep 2015 1:16 am Operator: CMendo
Sample : VO03I256 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



SC 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB383.D Vial: 8
Acq On : 25 Sep 2015 1:45 am Operator: CMendo
Sample : VO03I257 Inst : 03
Misc : 100ppb 8260/500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1841885	50.00	ug/l	0.00
52) CHLOROBENZENE-D5	13.89	117	1932427	50.00	ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.21	152	986312	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.52	111	1622545	105.60	ug/l	0.00
Spiked Amount 50.000			Recovery	=	211.20%	
39) 1,2-Dichloroethane-d4	9.95	65	1917768	103.78	ug/l	0.00
Spiked Amount 50.000			Recovery	=	207.56%	
53) Toluene-d8	12.13	98	4639352	99.42	ug/l	0.00
Spiked Amount 50.000			Recovery	=	198.84%	
73) 4-Bromofluorobenzene	15.21	95	2241348	92.36	ug/l	0.00
Spiked Amount 50.000			Recovery	=	184.72%	
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.97	116	395118	105.35	ug/l	97
3) Dichlorodifluoromethane	4.04	85	1088937	99.49	ug/l	100
4) Chloromethane	4.41	50	1142977	94.93	ug/l	99
5) Vinyl chloride	4.65	62	964208	101.57	ug/l	97
6) 2-Chloro-1,1,1-trifluoroet	4.80	118	536809	102.45	ug/l	99
7) Bromomethane	5.28	94	839706	85.30	ug/l	100
8) Chloroethane	5.45	64	586238	97.43	ug/l	98
9) Dichlorofluoromethane	5.75	67	2524436	92.27	ug/l	100
10) Trichlorofluoromethane	5.81	101	1588650	102.05	ug/l	100
11) Acrolein	6.50	56	884474	493.92	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	6.59	151	665617	95.90	ug/l	99
13) 1,1-Dichloroethene	6.63	61	2138492	96.86	ug/l	99
14) Acetone	6.71	43	2441041	458.47	ug/l	99
15) Iodomethane	6.91	142	2645292	99.16	ug/l	100
16) Carbon disulfide	7.03	76	5482662	102.61	ug/l	100
17) Methyl acetate	7.11	43	1167677	106.79	ug/l	99
18) Methylene chloride	7.32	49	2491997	93.60	ug/l	99
19) tert-Butyl alcohol	7.38	59	787114	495.98	ug/l	96
20) tert-Butyl methyl ether (M	7.59	73	3865269	100.34	ug/l	99
21) trans-1,2-Dichloroethene	7.66	61	2185866	96.17	ug/l	99
22) Acrylonitrile	7.66	53	2266525	507.83	ug/l	99
23) Isopropyl ether (DIPE)	8.14	45	6340765	104.92	ug/l	100
24) Vinyl acetate	8.18	43	4164785	104.29	ug/l	100
25) 1,1-Dichloroethane	8.23	63	2902362	96.88	ug/l	100
26) tert-Butyl ethyl ether (ET	8.60	59	5161272	103.61	ug/l	99
27) 2-Butanone	8.91	43	4396394	521.92	ug/l	99
28) 2,2-Dichloropropane	8.94	77	1817627	90.91	ug/l	100

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB383.D
Acq On : 25 Sep 2015 1:45 am
Sample : VO03I257
Misc : 100ppb 8260/500ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015

Vial: 8
Operator: CMendo
Inst : 03
Multiplr: 1.00

Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.96	96	1597496	97.00 ug/l	100
30)	2-Butanol	9.06	45	858080	542.70 ug/l	99
31)	Bromochloromethane	9.27	49	2107123	96.10 ug/l	100
32)	Tetrahydrofuran	9.30	42	477921	101.89 ug/l	99
33)	Chloroform	9.31	83	3244288	99.58 ug/l	100
35)	1,1,1-Trichloroethane	9.55	97	2128314	96.06 ug/l	99
36)	Cyclohexane	9.61	56	1600486	103.95 ug/l	99
37)	1,1-Dichloropropene	9.73	110	598185	98.71 ug/l	99
38)	Carbon tetrachloride	9.76	119	1717470	99.19 ug/l	98
40)	tert-Amyl methyl ether (TA	10.00	87	900739	100.37 ug/l	99
41)	Benzene	10.01	78	5624756	99.68 ug/l	100
42)	1,2-Dichloroethane	10.04	62	2395131	103.37 ug/l	100
43)	Trichloroethene	10.73	130	1407520	97.93 ug/l	98
44)	Methylcyclohexane	10.94	83	1800543	100.32 ug/l	98
45)	1,2-Dichloropropane	11.03	63	1753911	98.92 ug/l	98
46)	1,4-Dioxane	11.15	88	305102	1972.58 ug/l	99
47)	Dibromomethane	11.22	93	1237492	98.63 ug/l	97
48)	Bromodichloromethane	11.34	83	2818866	107.10 ug/l	100
49)	2-Chloroethyl vinyl ether	11.55	63	1159930	111.63 ug/l	100
50)	cis-1,3-Dichloropropene	11.82	75	3187886	100.33 ug/l	98
51)	4-Methyl-2-pentanone	11.89	43	10584482	495.32 ug/l	100
54)	Toluene	12.22	91	5989664	93.12 ug/l	100
55)	Ethyl methacrylate	12.37	69	2199306	97.45 ug/l	98
56)	trans-1,3-Dichloropropene	12.44	75	2932037	99.51 ug/l	100
57)	1,1,2-Trichloroethane	12.69	97	1390094	93.60 ug/l	99
58)	2-Hexanone	12.84	43	7730247	489.07 ug/l	99
59)	Tetrachloroethene	12.87	164	1156178	92.83 ug/l	99
60)	1,3-Dichloropropane	12.90	76	2748404	97.57 ug/l	100
61)	Dibromochloromethane	13.23	129	1807001	100.98 ug/l	99
62)	1,2-Dibromoethane	13.41	107	1559289	96.86 ug/l	100
63)	1-Chlorohexane	13.71	91	2373524	87.37 ug/l	96
64)	Chlorobenzene	13.92	112	3755510	96.06 ug/l	99
65)	Ethylbenzene	13.95	91	7583791	98.05 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	1570849	99.19 ug/l	99
67)	m-Xylene & p-Xylene	14.07	91	11176430	182.48 ug/l	99
68)	o-Xylene	14.56	91	6216329	95.99 ug/l	100
69)	Styrene	14.57	104	4219510	96.42 ug/l	98
71)	Bromoform	14.93	173	1225827	96.74 ug/l	100
72)	Isopropylbenzene	14.94	105	6095469	90.60 ug/l	99
74)	1,1,2,2-Tetrachloroethane	15.35	83	2490611	94.39 ug/l	99
75)	trans-1,4-Dichloro-2-buten	15.38	53	718429	96.26 ug/l	98

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

Sw 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB383.D
Acq On : 25 Sep 2015 1:45 am
Sample : VO03I257
Misc : 100ppb 8260/500ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015

Vial: 8
Operator: CMendo
Inst : 03
Multiplr: 1.00

Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	n-Propylbenzene	15.44	91	9174122	93.11 ug/l	100
77)	1,2,3-Trichloropropane	15.45	110	499239	94.54 ug/l	99
78)	Bromobenzene	15.48	156	1887799	91.80 ug/l	97
79)	1,3,5-Trimethylbenzene	15.60	105	5118568	91.93 ug/l	100
80)	2-Chlorotoluene	15.64	91	5871789	91.28 ug/l	99
81)	4-Chlorotoluene	15.76	91	5475426	93.21 ug/l	99
82)	tert-Butylbenzene	16.05	134	1020448	88.43 ug/l	98
83)	1,2,4-Trimethylbenzene	16.11	105	5267758	92.60 ug/l	97
84)	sec-Butylbenzene	16.31	105	6847174	93.89 ug/l	99
85)	p-Isopropyltoluene	16.45	119	4987335	92.75 ug/l	99
86)	1,3-Dichlorobenzene	16.60	146	3108279	93.93 ug/l	100
87)	1,4-Dichlorobenzene	16.70	146	3009510	92.35 ug/l	99
88)	n-Butylbenzene	16.97	91	5596550	93.35 ug/l	100
89)	1,2-Dichlorobenzene	17.22	146	2854281	94.57 ug/l	99
90)	1,2-Dibromo-3-chloropropan	18.30	157	324840	95.61 ug/l	97
91)	1,2,4-Trichlorobenzene	19.47	180	1202117	97.47 ug/l	100
92)	Hexachlorobutadiene	19.61	225	714235	91.16 ug/l	100
93)	Naphthalene	19.96	128	2792897	98.54 ug/l	100
94)	1,2,3-Trichlorobenzene	20.37	180	1022355	99.54 ug/l	99

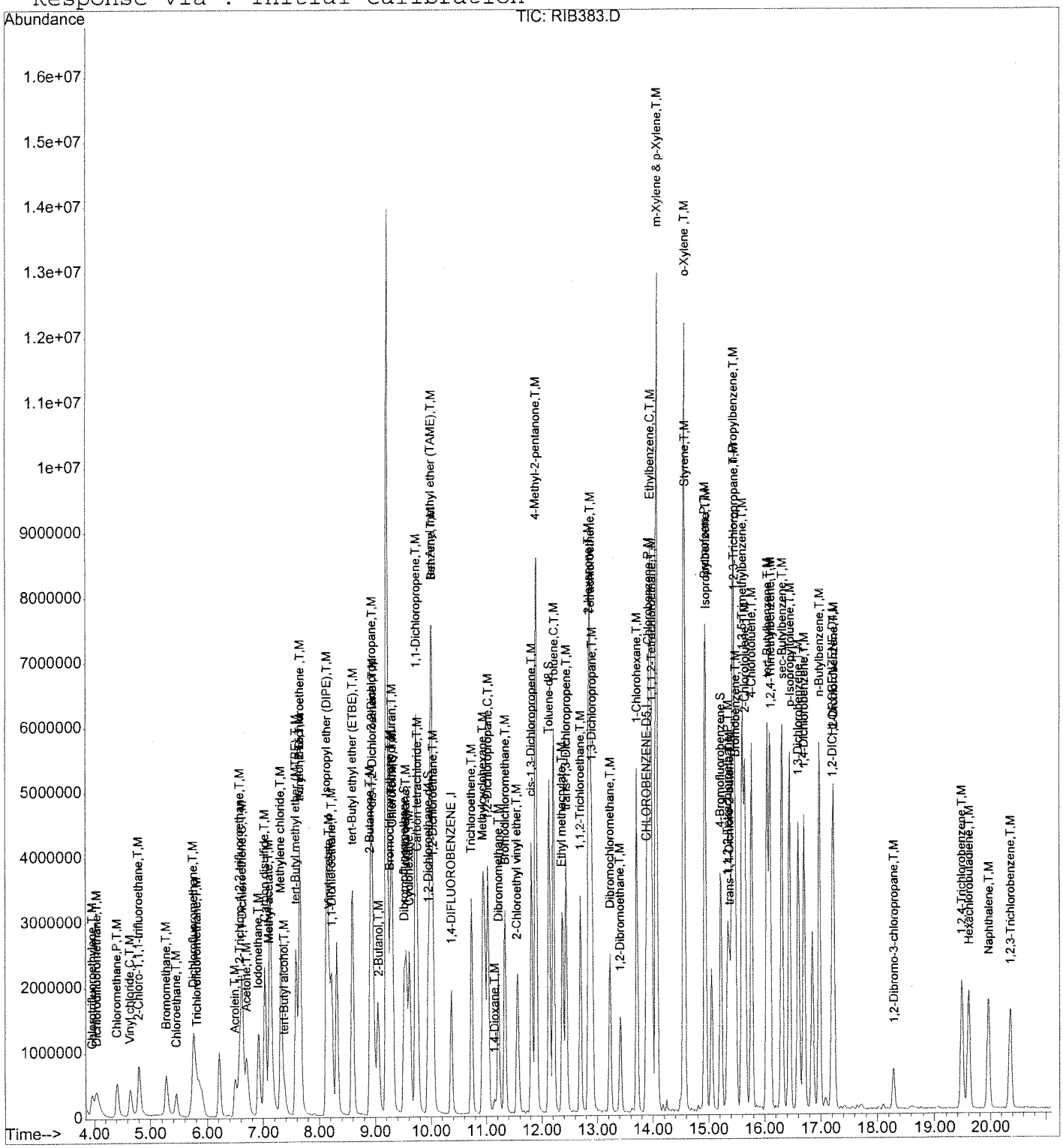
Su 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB383.D Vial: 8
Acq On : 25 Sep 2015 1:45 am Operator: CMendo
Sample : VO03I257 Inst : 03
Misc : 100ppb 8260/500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



Su 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB384.D Vial: 9
Acq On : 25 Sep 2015 2:13 am Operator: CMendo
Sample : VO03I258 Inst : 03
Misc : 200ppb 8260/1000ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1756218	50.00	ug/l	0.00
52) CHLOROBENZENE-D5	13.88	117	1781337	50.00	ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.20	152	781341	50.00	ug/l	0.01
System Monitoring Compounds						
34) Dibromofluoromethane	9.52	111	3236068	220.89	ug/l	0.00
Spiked Amount 50.000			Recovery = 441.78%			
39) 1,2-Dichloroethane-d4	9.95	65	3724879	211.41	ug/l	0.00
Spiked Amount 50.000			Recovery = 422.82%			
53) Toluene-d8	12.12	98	9582038	222.75	ug/l	0.00
Spiked Amount 50.000			Recovery = 445.50%			
73) 4-Bromofluorobenzene	15.22	95	4239591	220.52	ug/l	0.01
Spiked Amount 50.000			Recovery = 441.04%			
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.96	116	810794	226.72	ug/l	98
3) Dichlorodifluoromethane	4.04	85	2278523	218.32	ug/l	98
4) Chloromethane	4.42	50	2282821	198.86	ug/l	100
5) Vinyl chloride	4.66	62	1719588	189.98	ug/l	98
6) 2-Chloro-1,1,1-trifluoroet	4.81	118	1122182	224.62	ug/l	100
7) Bromomethane	5.26	94	1416449	150.90	ug/l	100
8) Chloroethane	5.44	64	888473	154.87	ug/l	98
9) Dichlorofluoromethane	5.75	67	4881914	187.15	ug/l	100
10) Trichlorofluoromethane	5.84	101	3173415	213.79	ug/l	100
11) Acrolein	6.51	56	1633714	957.82	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	6.60	151	1210851	182.96	ug/l	99
13) 1,1-Dichloroethene	6.63	61	4204431	199.71	ug/l	99
14) Acetone	6.70	43	4673754	920.64	ug/l	98
15) Iodomethane	6.93	142	5351012	210.37	ug/l	100
16) Carbon disulfide	7.03	76	10669905	209.44	ug/l	100
17) Methyl acetate	7.12	43	2240152	214.87	ug/l	99
18) Methylene chloride	7.31	49	5025940	197.99	ug/l	99
19) tert-Butyl alcohol	7.39	59	1455435	961.85	ug/l	99
20) tert-Butyl methyl ether (M	7.60	73	7263985	197.77	ug/l	100
21) trans-1,2-Dichloroethene	7.66	61	4278575	197.43	ug/l	99
22) Acrylonitrile	7.66	53	4318747	1014.84	ug/l	98
23) Isopropyl ether (DIPE)	8.15	45	11417592	198.14	ug/l	99
24) Vinyl acetate	8.18	43	8056795	211.59	ug/l	100
25) 1,1-Dichloroethane	8.22	63	5709597	199.88	ug/l	100
26) tert-Butyl ethyl ether (ET	8.59	59	9442606	198.80	ug/l	99
27) 2-Butanone	8.91	43	8427536	1049.29	ug/l	100
28) 2,2-Dichloropropane	8.94	77	3406109	178.67	ug/l	100

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

Sa 10/9/15

361

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB384.D Vial: 9
Acq On : 25 Sep 2015 2:13 am Operator: CMendo
Sample : VO03I258 Inst : 03
Misc : 200ppb 8260/1000ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.95	96	3180724	202.56 ug/l	99
30)	2-Butanol	9.06	45	1500157	995.06 ug/l	99
31)	Bromochloromethane	9.28	49	5083008	243.14 ug/l	87
32)	Tetrahydrofuran	9.29	42	885630	198.01 ug/l	98
33)	Chloroform	9.31	83	6243204	200.98 ug/l	97
35)	1,1,1-Trichloroethane	9.55	97	4159760	196.90 ug/l	99
36)	Cyclohexane	9.61	56	3009296	204.98 ug/l	100
37)	1,1-Dichloropropene	9.73	110	1185795	205.22 ug/l	99
38)	Carbon tetrachloride	9.76	119	3402293	206.07 ug/l	98
40)	tert-Amyl methyl ether (TA	9.99	87	1734671	202.72 ug/l	98
41)	Benzene	10.01	78	10823071	201.17 ug/l	100
42)	1,2-Dichloroethane	10.04	62	4609898	208.65 ug/l	99
43)	Trichloroethene	10.74	130	2766516	201.87 ug/l	99
44)	Methylcyclohexane	10.93	83	3554985	207.73 ug/l	99
45)	1,2-Dichloropropane	11.02	63	3473388	205.45 ug/l	96
46)	1,4-Dioxane	11.14	88	575909	3905.06 ug/l	96
47)	Dibromomethane	11.22	93	2496414	208.68 ug/l	99
48)	Bromodichloromethane	11.34	83	5321982	212.06 ug/l	100
49)	2-Chloroethyl vinyl ether	11.54	63	2162079	218.22 ug/l	99
50)	cis-1,3-Dichloropropene	11.81	75	6462102	213.30 ug/l	100
51)	4-Methyl-2-pentanone	11.90	43	18772382	921.35 ug/l	98
54)	Toluene	12.21	91	11956953	201.65 ug/l	100
55)	Ethyl methacrylate	12.38	69	4170783	200.47 ug/l	99
56)	trans-1,3-Dichloropropene	12.44	75	5805904	213.75 ug/l	95
57)	1,1,2-Trichloroethane	12.69	97	2804309	204.84 ug/l	99
58)	2-Hexanone	12.85	43	14096848	967.52 ug/l	100
59)	Tetrachloroethene	12.88	164	2282176	198.78 ug/l	99
60)	1,3-Dichloropropane	12.90	76	5431726	209.19 ug/l	99
61)	Dibromochloromethane	13.23	129	3516670	213.19 ug/l	100
62)	1,2-Dibromoethane	13.42	107	3106899	209.36 ug/l	100
63)	1-Chlorohexane	13.72	91	4968959	198.42 ug/l	99
64)	Chlorobenzene	13.91	112	7001161	194.27 ug/l	98
65)	Ethylbenzene	13.94	91	13758237	192.97 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.99	131	2934680	201.03 ug/l	100
67)	m-Xylene & p-Xylene	14.06	91	18437313	326.56 ug/l	92
68)	o-Xylene	14.55	91	11389696	190.78 ug/l	100
69)	Styrene	14.57	104	7829495	194.09 ug/l	98
71)	Bromoform	14.93	173	2300083	229.15 ug/l	99
72)	Isopropylbenzene	14.94	105	11633091	218.27 ug/l	99
74)	1,1,2,2-Tetrachloroethane	15.34	83	4432870	212.08 ug/l	99
75)	trans-1,4-Dichloro-2-buten	15.39	53	1302338	220.27 ug/l	98

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

Sc 10/9/15

362

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB384.D
Acq On : 25 Sep 2015 2:13 am
Sample : VO03I258
Misc : 200ppb 8260/1000ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015

Vial: 9
Operator: CMendo
Inst : 03
Multiplr: 1.00
Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	n-Propylbenzene	15.43	91	16473078	211.04 ug/l	99
77)	1,2,3-Trichloropropane	15.45	110	871091	208.24 ug/l	97
78)	Bromobenzene	15.48	156	3580674	219.79 ug/l	98
79)	1,3,5-Trimethylbenzene	15.60	105	9293866	210.70 ug/l	99
80)	2-Chlorotoluene	15.64	91	10998476	215.83 ug/l	100
81)	4-Chlorotoluene	15.76	91	10527657	226.23 ug/l	98
82)	tert-Butylbenzene	16.04	134	1920886	210.13 ug/l	97
83)	1,2,4-Trimethylbenzene	16.10	105	9505211	210.93 ug/l	91
84)	sec-Butylbenzene	16.31	105	11873080	205.52 ug/l	100
85)	p-Isopropyltoluene	16.45	119	9037308	212.16 ug/l	98
86)	1,3-Dichlorobenzene	16.59	146	5563258	212.21 ug/l	100
87)	1,4-Dichlorobenzene	16.70	146	5555361	215.20 ug/l	99
88)	n-Butylbenzene	16.97	91	10077397	212.19 ug/l	100
89)	1,2-Dichlorobenzene	17.23	146	4819571	201.58 ug/l	99
90)	1,2-Dibromo-3-chloropropan	18.29	157	537197	199.59 ug/l	98
91)	1,2,4-Trichlorobenzene	19.48	180	2188536	224.01 ug/l	99
92)	Hexachlorobutadiene	19.60	225	1238406	199.53 ug/l	100
93)	Naphthalene	19.96	128	4944529	220.22 ug/l	100
94)	1,2,3-Trichlorobenzene	20.36	180	1777629	218.49 ug/l	99

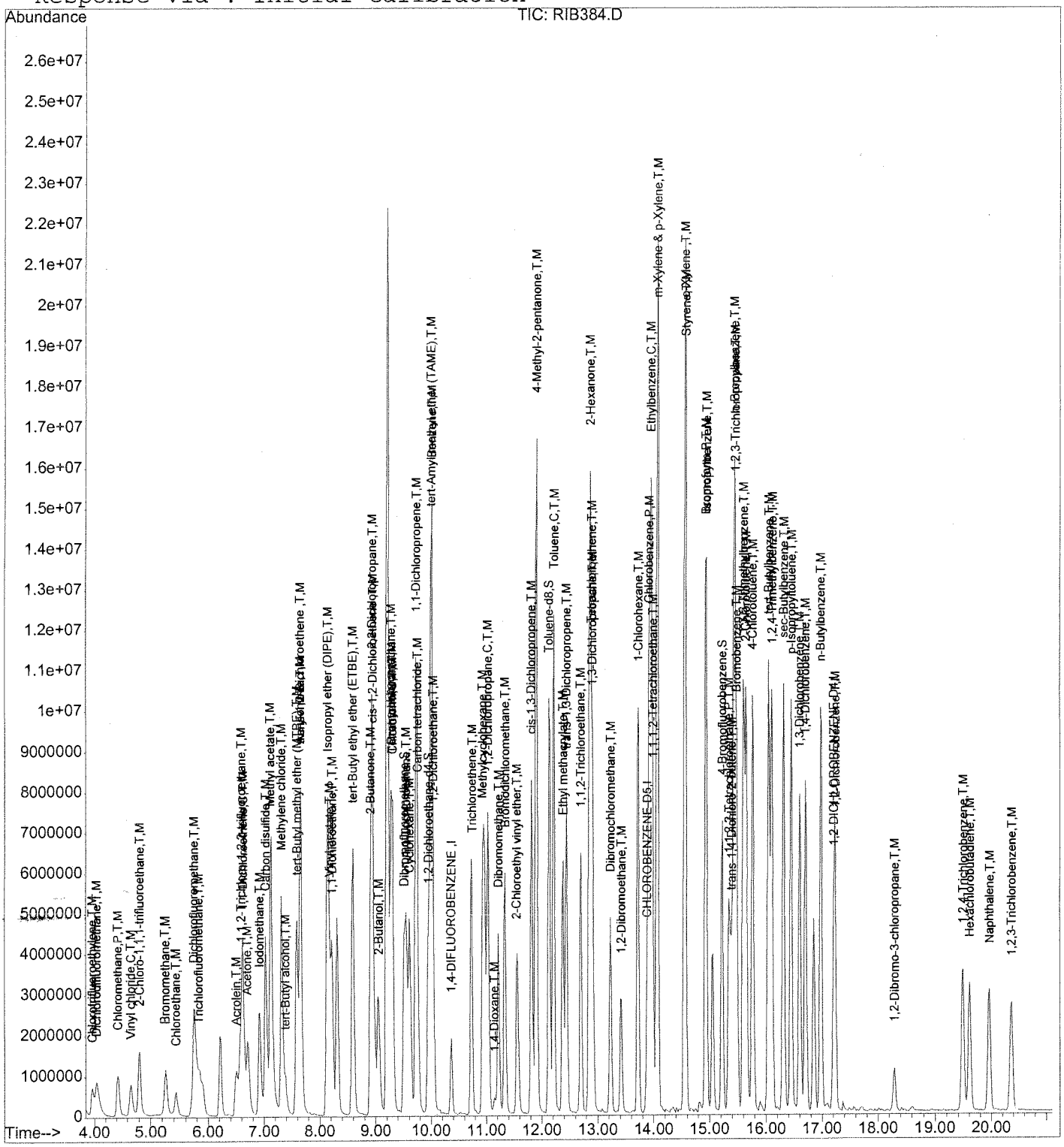
SW 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB384.D Vial: 9
Acq On : 25 Sep 2015 2:13 am Operator: CMendo
Sample : VO03I258 Inst : 03
Misc : 200ppb 8260/1000ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



364

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB385.D Vial: 10
Acq On : 25 Sep 2015 2:41 am Operator: CMendo
Sample : VO03I259 Inst : 03
Misc : 300ppb 8260/1500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 - 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1845737	50.00	ug/l	0.00
52) CHLOROBENZENE-D5	13.89	117	1862058	50.00	ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.21	152	859688	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.52	111	4845394	314.70	ug/l	0.00
Spiked Amount 50.000			Recovery	=	629.40%	
39) 1,2-Dichloroethane-d4	9.96	65	5831430	314.92	ug/l	0.00
Spiked Amount 50.000			Recovery	=	629.84%	
53) Toluene-d8	12.13	98	14305533	318.13	ug/l	0.00
Spiked Amount 50.000			Recovery	=	636.26%	
73) 4-Bromofluorobenzene	15.23	95	6274843	296.64	ug/l	0.02
Spiked Amount 50.000			Recovery	=	593.28%	
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.97	116	1164240	309.77	ug/l	95
3) Dichlorodifluoromethane	4.04	85	3317710	302.47	ug/l	96
4) Chloromethane	4.43	50	3610934	299.29	ug/l	100
5) Vinyl chloride	4.67	62	2955276	310.66	ug/l	98
6) 2-Chloro-1,1,1-trifluoroet	4.80	118	1661645	316.48	ug/l	99
7) Bromomethane	5.25	94	1431539	145.12	ug/l	100
8) Chloroethane	5.40	64	1121952	186.08	ug/l	97
9) Dichlorofluoromethane	5.75	67	6518735	237.78	ug/l	99
10) Trichlorofluoromethane	5.83	101	4638520	297.33	ug/l	100
11) Acrolein	6.50	56	2694441	1503.69	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	6.59	151	1950534	280.43	ug/l	99
13) 1,1-Dichloroethene	6.62	61	6356572	287.30	ug/l	100
14) Acetone	6.71	43	7933818	1487.01	ug/l	99
15) Iodomethane	6.92	142	7924755	296.44	ug/l	99
16) Carbon disulfide	7.02	76	15106564	282.14	ug/l	99
17) Methyl acetate	7.11	43	3602716	328.80	ug/l	100
18) Methylene chloride	7.32	49	7249076	271.72	ug/l	99
19) tert-Butyl alcohol	7.41	59	2772909	1743.64	ug/l	99
20) tert-Butyl methyl ether (M	7.60	73	11751691	304.44	ug/l	99
21) trans-1,2-Dichloroethene	7.66	61	6497950	285.30	ug/l	99
22) Acrylonitrile	7.66	53	7431277	1661.55	ug/l	98
23) Isopropyl ether (DIPE)	8.14	45	18757826	309.73	ug/l	99
24) Vinyl acetate	8.18	43	13371032	334.13	ug/l	99
25) 1,1-Dichloroethane	8.23	63	8643564	287.91	ug/l	99
26) tert-Butyl ethyl ether (ET	8.60	59	15287639	306.25	ug/l	100
27) 2-Butanone	8.91	43	14284930	1692.31	ug/l	99
28) 2,2-Dichloropropane	8.94	77	4769046	238.03	ug/l	100

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

Su 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB385.D Vial: 10
Acq On : 25 Sep 2015 2:41 am Operator: CMendo
Sample : VO03I259 Inst : 03
Misc : 300ppb 8260/1500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.96	96	4740201	287.23 ug/l	98
30)	2-Butanol	9.08	45	2708382	1709.36 ug/l	98
31)	Bromochloromethane	9.27	49	6293749	286.45 ug/l	96
32)	Tetrahydrofuran	9.30	42	1420431	302.18 ug/l	98
33)	Chloroform	9.31	83	8921342	273.26 ug/l	100
35)	1,1,1-Trichloroethane	9.55	97	6002760	270.36 ug/l	99
36)	Cyclohexane	9.61	56	4702659	304.79 ug/l	98
37)	1,1-Dichloropropene	9.73	110	1624857	267.56 ug/l	100
38)	Carbon tetrachloride	9.76	119	4645179	267.71 ug/l	99
40)	tert-Amyl methyl ether (TA	10.00	87	2642794	293.87 ug/l	99
41)	Benzene	10.01	78	15409320	272.52 ug/l	100
42)	1,2-Dichloroethane	10.04	62	6929756	298.44 ug/l	100
43)	Trichloroethene	10.73	130	4090519	284.01 ug/l	98
44)	Methylcyclohexane	10.94	83	5341101	296.96 ug/l	99
45)	1,2-Dichloropropane	11.03	63	5166789	290.80 ug/l	98
46)	1,4-Dioxane	11.16	88	917345	5918.55 ug/l	97
47)	Dibromomethane	11.22	93	3873188	308.06 ug/l	99
48)	Bromodichloromethane	11.34	83	7968853	302.13 ug/l	100
49)	2-Chloroethyl vinyl ether	11.56	63	3347322	321.46 ug/l	99
50)	cis-1,3-Dichloropropene	11.82	75	9230263	289.89 ug/l	97
51)	4-Methyl-2-pentanone	11.91	43	23020234	1075.03 ug/l	87
54)	Toluene	12.22	91	16511283	266.39 ug/l	98
55)	Ethyl methacrylate	12.38	69	6510083	299.35 ug/l	97
56)	trans-1,3-Dichloropropene	12.44	75	8582775	302.29 ug/l	95
57)	1,1,2-Trichloroethane	12.70	97	4191533	292.90 ug/l	100
58)	2-Hexanone	12.86	43	19555643	1284.00 ug/l	90
59)	Tetrachloroethene	12.88	164	3145561	262.11 ug/l	99
60)	1,3-Dichloropropane	12.90	76	7916733	291.68 ug/l	100
61)	Dibromochloromethane	13.23	129	5289703	306.77 ug/l	100
62)	1,2-Dibromoethane	13.41	107	4678888	301.62 ug/l	100
63)	1-Chlorohexane	13.72	91	7298665	278.81 ug/l	99
64)	Chlorobenzene	13.92	112	10041643	266.56 ug/l	97
65)	Ethylbenzene	13.95	91	17423919	233.79 ug/l	95
66)	1,1,1,2-Tetrachloroethane	13.99	131	4203807	275.49 ug/l	99
67)	m-Xylene & p-Xylene	14.07	91	21938969	371.73 ug/l	79
68)	o-Xylene	14.56	91	15621171	250.32 ug/l	100
69)	Styrene	14.57	104	10652416	252.62 ug/l	98
71)	Bromoform	14.93	173	3526023	319.27 ug/l	100
72)	Isopropylbenzene	14.95	105	15910639	271.32 ug/l	99
74)	1,1,2,2-Tetrachloroethane	15.35	83	6909144	300.42 ug/l	100
75)	trans-1,4-Dichloro-2-buten	15.39	53	2056460	316.11 ug/l	98

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

Su 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB385.D Vial: 10
Acq On : 25 Sep 2015 2:41 am Operator: CMendo
Sample : VO03I259 Inst : 03
Misc : 300ppb 8260/1500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	n-Propylbenzene	15.44	91	20647420	240.41 ug/l	95
77)	1,2,3-Trichloropropane	15.45	110	1325879	288.07 ug/l	99
78)	Bromobenzene	15.48	156	5173182	288.60 ug/l	98
79)	1,3,5-Trimethylbenzene	15.60	105	13169136	271.35 ug/l	99
80)	2-Chlorotoluene	15.65	91	15682356	279.70 ug/l	100
81)	4-Chlorotoluene	15.77	91	14556689	284.31 ug/l	98
82)	tert-Butylbenzene	16.05	134	2592884	257.79 ug/l	99
83)	1,2,4-Trimethylbenzene	16.11	105	13313809	268.52 ug/l	92
84)	sec-Butylbenzene	16.32	105	16611121	261.33 ug/l	100
85)	p-Isopropyltoluene	16.45	119	12440084	265.43 ug/l	98
86)	1,3-Dichlorobenzene	16.60	146	7971803	276.37 ug/l	99
87)	1,4-Dichlorobenzene	16.70	146	7945196	279.72 ug/l	99
88)	n-Butylbenzene	16.97	91	14008315	268.08 ug/l	99
89)	1,2-Dichlorobenzene	17.24	146	7170618	272.59 ug/l	100
90)	1,2-Dibromo-3-chloropropan	18.30	157	909856	307.24 ug/l	98
91)	1,2,4-Trichlorobenzene	19.49	180	3106482	288.99 ug/l	99
92)	Hexachlorobutadiene	19.61	225	1752969	256.69 ug/l	98
93)	Naphthalene	19.97	128	7438481	301.11 ug/l	100
94)	1,2,3-Trichlorobenzene	20.37	180	2486990	277.82 ug/l	100

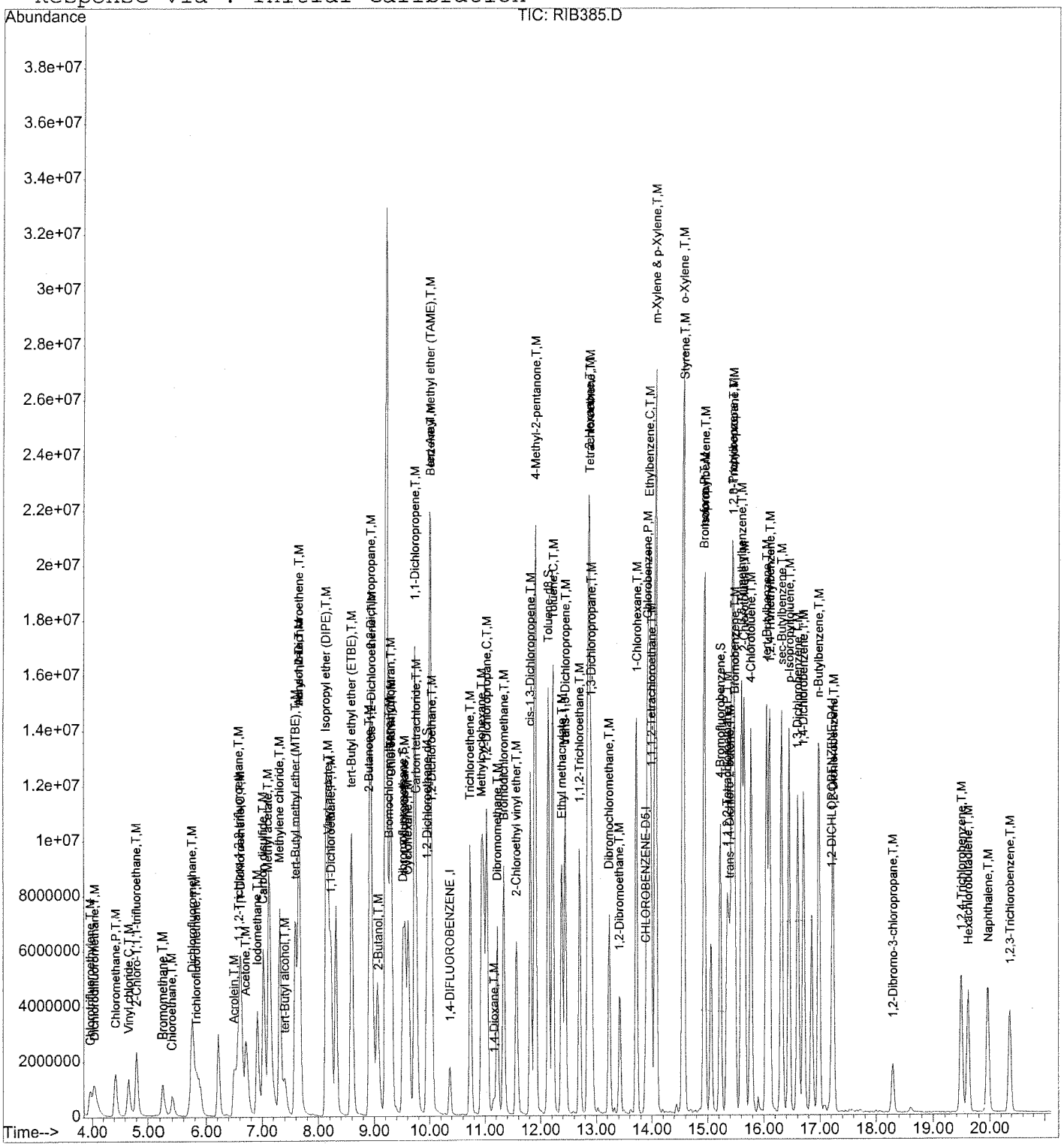
Sw 10/9/15

(#) = qualifier out of range (m) = manual integration
RIB385.D VO03I25.M Wed Oct 07 21:14:21 2015

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB385.D Vial: 10
Acq On : 25 Sep 2015 2:41 am Operator: CMendo
Sample : VO03I259 Inst : 03
Misc : 300ppb 8260/1500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:09 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



SM 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB386.D Vial: 11
Acq On : 25 Sep 2015 3:09 am Operator: CMendo
Sample : VO03I2510 Inst : 03
Misc : 500ppb 8260/2500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:25 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.37	114	1785965	50.00 ug/l	0.00
52) CHLOROBENZENE-D5	13.88	117	1623939	50.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.20	152	690722	50.00 ug/l	0.01
System Monitoring Compounds					
34) Dibromofluoromethane	9.52	111	7672116	514.97 ug/l	0.00
Spiked Amount 50.000			Recovery	= 1029.94%	
39) 1,2-Dichloroethane-d4	9.95	65	9029424	503.95 ug/l	0.00
Spiked Amount 50.000			Recovery	= 1007.90%	
53) Toluene-d8	12.14	98	19549276	498.49 ug/l	0.01
Spiked Amount 50.000			Recovery	= 996.98%	
73) 4-Bromofluorobenzene	15.22	95	9168428	539.47 ug/l	0.01
Spiked Amount 50.000			Recovery	= 1078.94%	

Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.96	116	2000669	550.13 ug/l	97
3) Dichlorodifluoromethane	4.04	85	5489170	517.19 ug/l	99
4) Chloromethane	4.42	50	5811425	497.80 ug/l	99
5) Vinyl chloride	4.66	62	4778566	519.14 ug/l	98
6) 2-Chloro-1,1,1-trifluoroet	4.79	118	2825666	556.19 ug/l	99
7) Bromomethane	5.24	94	2053629	215.14 ug/l	100
8) Chloroethane	5.41	64	1177653	201.86 ug/l	91
9) Dichlorofluoromethane	5.73	67	9681746	364.97 ug/l	100
10) Trichlorofluoromethane	5.81	101	7301224	483.67 ug/l	100
11) Acrolein	6.49	56	4442591	2563.01 ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	6.58	151	3355652	498.60 ug/l	99
13) 1,1-Dichloroethene	6.61	61	10726373	501.02 ug/l	99
14) Acetone	6.72	43	12480568	2417.49 ug/l	96
15) Iodomethane	6.91	142	12892693	498.42 ug/l	100
16) Carbon disulfide	7.01	76	25435372	490.95 ug/l	100
17) Methyl acetate	7.12	43	5991731	565.13 ug/l	99
18) Methylene chloride	7.31	49	11621107	450.18 ug/l	100
19) tert-Butyl alcohol	7.42	59	3831472	2489.92 ug/l	79
20) tert-Butyl methyl ether (M	7.60	73	18926277	506.71 ug/l	99
21) trans-1,2-Dichloroethene	7.66	61	10682891	484.74 ug/l	99
22) Acrylonitrile	7.67	53	11538728	2666.27 ug/l	99
23) Isopropyl ether (DIPE)	8.15	45	25434244	434.03 ug/l	93
24) Vinyl acetate	8.18	43	20153124	520.46 ug/l	99
25) 1,1-Dichloroethane	8.22	63	14552523	500.95 ug/l	100
26) tert-Butyl ethyl ether (ET	8.59	59	22647268	468.87 ug/l	98
27) 2-Butanone	8.91	43	19597154	2399.34 ug/l	99
28) 2,2-Dichloropropane	8.94	77	6926120	357.26 ug/l	99

(#) = qualifier out of range (m) = manual integration
RIB386.D VO03I25.M Wed Oct 07 21:25:59 2015

Sa 10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB386.D Vial: 11
Acq On : 25 Sep 2015 3:09 am Operator: CMendo
Sample : VO03I2510 Inst : 03
Misc : 500ppb 8260/2500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:25 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.95	96	7330379	459.05 ug/l	98
30)	2-Butanol	9.09	45	3358578	2190.66 ug/l	98
31)	Bromochloromethane	9.26	49	9797126	460.83 ug/l	97
32)	Tetrahydrofuran	9.31	42	2107451	463.34 ug/l	98
33)	Chloroform	9.31	83	14788691	468.13 ug/l	100
35)	1,1,1-Trichloroethane	9.55	97	9666332	449.94 ug/l	99
36)	Cyclohexane	9.61	56	7303121	489.17 ug/l	98
37)	1,1-Dichloropropene	9.73	110	2628879	447.38 ug/l	100
38)	Carbon tetrachloride	9.76	119	7613867	453.48 ug/l	99
40)	tert-Amyl methyl ether (TA	9.99	87	3925441	451.11 ug/l	93
41)	Benzene	10.01	78	20785803	379.91 ug/l	95
42)	1,2-Dichloroethane	10.04	62	10273204	457.24 ug/l	100
43)	Trichloroethene	10.72	130	6714139	481.77 ug/l	98
44)	Methylcyclohexane	10.93	83	8366659	480.74 ug/l	99
45)	1,2-Dichloropropane	11.02	63	7721339	449.11 ug/l	94
46)	1,4-Dioxane	11.16	88	1308489	8724.68 ug/l	95
47)	Dibromomethane	11.22	93	5924116	486.96 ug/l	99
48)	Bromodichloromethane	11.33	83	12471843	488.67 ug/l	100
49)	2-Chloroethyl vinyl ether	11.56	63	5052670	501.48 ug/l	99
50)	cis-1,3-Dichloropropene	11.81	75	14884268	483.11 ug/l	99
54)	Toluene	12.21	91	21714524	401.70 ug/l	81
55)	Ethyl methacrylate	12.38	69	10060911	530.45 ug/l	100
56)	trans-1,3-Dichloropropene	12.44	75	13156852	531.34 ug/l	96
57)	1,1,2-Trichloroethane	12.71	97	6475569	518.86 ug/l	99
58)	2-Hexanone	12.85	43	22449225	1690.12 ug/l	78
59)	Tetrachloroethene	12.88	164	5048426	482.35 ug/l	97
60)	1,3-Dichloropropane	12.91	76	12018070	507.71 ug/l	100
61)	Dibromochloromethane	13.23	129	8243897	548.21 ug/l	100
62)	1,2-Dibromoethane	13.42	107	7009426	518.11 ug/l	100
63)	1-Chlorohexane	13.72	91	11082993	485.46 ug/l	99
64)	Chlorobenzene	13.93	112	15883118	483.44 ug/l	97
65)	Ethylbenzene	13.96	91	21423996	329.62 ug/l	81
66)	1,1,1,2-Tetrachloroethane	13.99	131	6362372	478.08 ug/l	99
68)	o-Xylene	14.55	91	20468658	376.09 ug/l	89
69)	Styrene	14.57	104	16557313	450.22 ug/l	97
71)	Bromoform	14.94	173	5315434	599.02 ug/l	100
72)	Isopropylbenzene	14.94	105	20998474	445.68 ug/l	94
74)	1,1,2,2-Tetrachloroethane	15.34	83	10070016	544.97 ug/l	99
75)	trans-1,4-Dichloro-2-buten	15.39	53	3018283	577.46 ug/l	100
76)	n-Propylbenzene	15.43	91	24052093	348.57 ug/l	87
77)	1,2,3-Trichloropropane	15.45	110	1753595	474.19 ug/l	98

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

10/9/15

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I24\RIB386.D Vial: 11
Acq On : 25 Sep 2015 3:09 am Operator: CMendo
Sample : VO03I2510 Inst : 03
Misc : 500ppb 8260/2500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:25 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78)	Bromobenzene	15.48	156	7557549	524.76 ug/l	96
79)	1,3,5-Trimethylbenzene	15.60	105	17946653	460.24 ug/l	96
80)	2-Chlorotoluene	15.65	91	21207590	470.77 ug/l	96
81)	4-Chlorotoluene	15.76	91	19537836	474.94 ug/l	97
82)	tert-Butylbenzene	16.04	134	3819484	472.63 ug/l	99
83)	1,2,4-Trimethylbenzene	16.10	105	18455339	463.26 ug/l	88
84)	sec-Butylbenzene	16.31	105	21454696	420.09 ug/l	93
85)	p-Isopropyltoluene	16.44	119	17477527	464.13 ug/l	99
86)	1,3-Dichlorobenzene	16.61	146	11605101	500.75 ug/l	99
87)	1,4-Dichlorobenzene	16.71	146	11687617	512.14 ug/l	98
88)	n-Butylbenzene	16.98	91	19466966	463.68 ug/l	94
89)	1,2-Dichlorobenzene	17.23	146	10411109	492.59 ug/l	100
90)	1,2-Dibromo-3-chloropropan	18.29	157	1341018	563.62 ug/l	97
91)	1,2,4-Trichlorobenzene	19.48	180	4868643	563.71 ug/l	100
92)	Hexachlorobutadiene	19.60	225	2635166	480.27 ug/l	99
93)	Naphthalene	19.96	128	11029822	555.70 ug/l	100
94)	1,2,3-Trichlorobenzene	20.36	180	3938428	547.58 ug/l	100

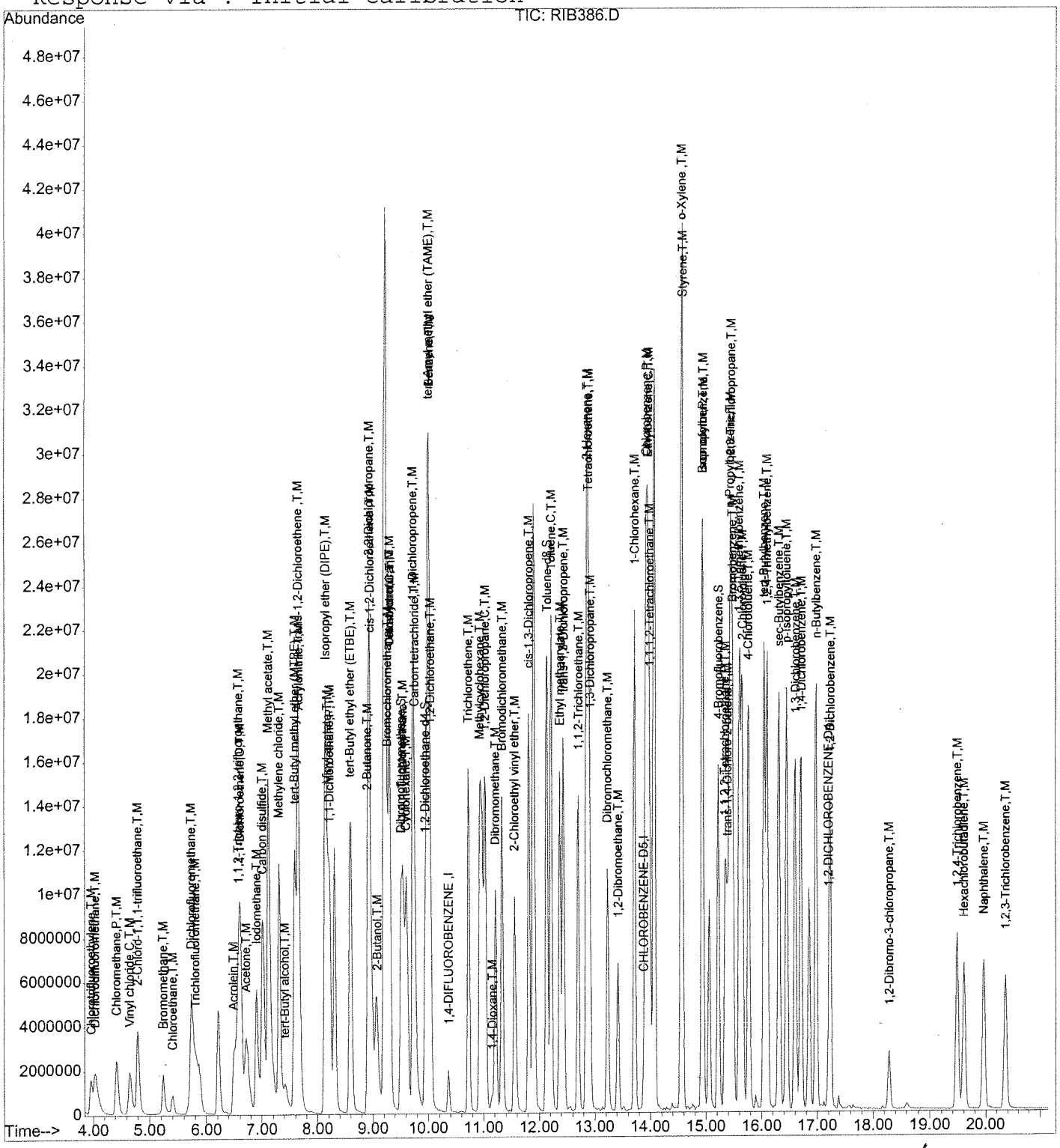
Su 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I24\RIB386.D Vial: 11
Acq On : 25 Sep 2015 3:09 am Operator: CMendo
Sample : VO03I2510 Inst : 03
Misc : 500ppb 8260/2500ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Oct 7 21:25 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



Sa 10/9/15

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SECOND SOURCE VERIFICATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RIB451
Instrument ID: 03
GC Column: ZB-624 ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 09/27/15
BFB Injection Time : 11:19
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.16
75	30.0 - 60.0% of mass 95	47.29
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	5.75
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	63.24
175	5.0 - 9.0% of mass 174	4.85(7.7)1
176	95.0 - 101.0% of mass 174	61.07(96.6)1
177	5.0 - 9.0% of mass 176	4.18(6.8)2

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

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	VSTD050	IV003I252	RIB452	09/27/15	11:52

FORM V VOA OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :03
IC_Beginning DateTime :09/24/15 22:55
Spike Amount :50 PPB
CC/CV File :RIB452
IC File :RIB382

Column Spec :ZB-624 ID :0.25MM
IC_Ending DateTime :09/25/15 03:09
HPChem Method :V003I25
Date_Time :09/27/15 11:52

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	2193017	1	1	10.358	10.369	0				
	2	Chlorotrifluoroethylene	55.128	10.3	246179	0.112	0.102	3.952	3.965	13.57				
	3	Dichlorodifluoromethane	50.705	1.4	660809	0.301	0.297	4.042	4.036	13.31				
	4	Chloromethane	47.317	-5.4	678287	0.309	0.327	4.399	4.413	3.54				
	5	Vinyl chloride	50.373	0.7	569348	0.260	0.258	4.637	4.648	4.93				
	6	2-Chloro-1,1,1-trifluoroethane	54.213	8.4	338199	0.154	0.142	4.786	4.803	10.63				
	7	Bromomethane	46.630	-6.7	546545	0.249	0.267	5.263	5.285	10.96				
	8	Chloroethane	51.671	3.3	370158	0.169	0.163	5.427	5.447	11.02				
	9	Dichlorofluoromethane	47.257	-5.5	1539314	0.702	0.743	5.740	5.751	12.19				
	10	Trichlorofluoromethane	52.986	6.0	982139	0.448	0.423	5.814	5.821	5.90				
5	11	Acrolein	232.278	-7.1	496439	0.045	0.051	6.499	6.503	18.38	0.0010	0.0485		0.9994
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	45.630	-8.7	377091	0.172	0.188	6.574	6.585	6.89				
	13	1,1-Dichloroethene	46.670	-6.7	1226881	0.559	0.599	6.619	6.627	4.71				
5	14	Acetone	219.449	-12.2	1391146	0.127	0.145	6.693	6.710	14.46				
	15	Iodomethane	45.504	-9.0	1445324	0.659	0.724	6.917	6.923	3.33				
	16	Carbon disulfide	48.511	-3.0	3086115	1.407	1.450	7.036	7.034	7.44				
	17	Methyl acetate	48.335	-3.3	629273	0.287	0.297	7.110	7.120	14.62				
	18	Methylene chloride	46.254	-7.5	1466154	0.669	0.723	7.319	7.317	12.68				
5	19	tert-Butyl alcohol	231.845	-7.3	438074	0.040	0.043	7.364	7.385	6.87				
	20	tert-Butyl methyl ether (MTBE)	46.048	-7.9	2111973	0.963	1.046	7.587	7.594	3.08				
	21	trans-1,2-Dichloroethene	48.928	-2.1	1324046	0.604	0.617	7.661	7.664	5.26				
5	22	Acrylonitrile	260.177	4.1	1382581	0.126	0.121	7.647	7.664	7.27				
	23	Isopropyl ether (DIPE)	48.604	-2.8	3497403	1.595	1.641	8.123	8.136	4.78				
	24	Vinyl acetate	41.040	-17.9	1951360	0.890	1.084	8.168	8.181	11.44				
	25	1,1-Dichloroethane	48.839	-2.3	1742108	0.794	0.813	8.213	8.224	4.08				
	26	tert-Butyl ethyl ether (ETBE)	45.259	-9.5	2684322	1.224	1.352	8.585	8.595	3.91				
5	27	2-Butanone	249.283	-0.3	2500131	0.228	0.229	8.898	8.913	8.85				
	28	2,2-Dichloropropane	50.568	1.1	1203788	0.549	0.543	8.928	8.939	13.02				
	29	cis-1,2-Dichloroethene	47.240	-5.5	926301	0.422	0.447	8.943	8.954	6.49				
5	30	2-Butanol	252.036	0.8	474473	0.043	0.043	9.047	9.065	7.78				
	31	Bromochloromethane	46.286	-7.4	1208300	0.551	0.595	9.270	9.268	8.39				
	32	Tetrahydrofuran	47.457	-5.1	265048	0.121	0.127	9.300	9.303	5.90				
	33	Chloroform	45.121	-9.8	1750265	0.798	0.884	9.300	9.310	6.83				
	34	Dibromofluoromethane	50.369	0.7	921427	0.420	0.417	9.509	9.520	9.46				
	35	1,1,1-Trichloroethane	45.293	-9.4	1194839	0.545	0.601	9.553	9.554	7.67				
	36	Cyclohexane	50.929	1.9	933639	0.426	0.418	9.613	9.612	4.52				
	37	1,1-Dichloropropene	49.664	-0.7	358348	0.163	0.165	9.732	9.730	7.70				
	38	Carbon tetrachloride	46.373	-7.3	956037	0.436	0.470	9.747	9.758	6.41				
	39	1,2-Dichloroethane-d4	47.321	-5.4	1041105	0.475	0.502	9.941	9.952	8.31				
	40	tert-Amyl methyl ether (TAME)	44.291	-11.4	473249	0.216	0.244	9.985	9.993	5.69				
	41	Benzene	46.747	-6.5	3140586	1.432	1.532	10.000	10.011	10.88				
	42	1,2-Dichloroethane	41.583	-16.8	1147197	0.523	0.629	10.045	10.041	4.24				
	43	Trichloroethene	49.860	-0.3	853247	0.389	0.390	10.730	10.734	5.14				
	44	Methylcyclohexane	49.939	-0.1	1067193	0.487	0.487	10.939	10.938	7.68				
	45	1,2-Dichloropropane	48.165	-3.7	1016809	0.464	0.481	11.028	11.027	6.88				
20	46	1,4-Dioxane	930.356	-7.0	171332	0.004	0.004	11.147	11.154	11.89				
	47	Dibromomethane	44.820	-10.4	669542	0.305	0.341	11.222	11.218	4.61				
	48	Bromodichloromethane	44.807	-10.4	1404199	0.640	0.715	11.341	11.337	5.64				
	49	2-Chloroethyl vinyl ether	46.047	-7.9	569688	0.260	0.282	11.550	11.558	7.60				

Sm
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	50	cis-1,3-Dichloropropene	45.585	-8.8	1724539	0.786	0.863	11.818	11.817	4.87				
5	51	4-Methyl-2-pentanone	237.174	-5.1	6034289	0.550	0.580	11.892	11.898	3.62				
	52	CHLOROBENZENE-D5	50.000	0	2172313	1	1	13.888	13.885	0				
	53	Toluene-d8	53.404	6.8	2801520	1.290	1.207	12.130	12.127	9.43				
	54	Toluene	45.351	-9.3	3279281	1.510	1.664	12.220	12.215	6.89				
	55	Ethyl methacrylate	46.569	-6.9	1181514	0.544	0.584	12.384	12.378	4.22				
	56	trans-1,3-Dichloropropene	44.916	-10.2	1487763	0.685	0.762	12.443	12.441	5.15				
	57	1,1,2-Trichloroethane	45.961	-8.1	767315	0.353	0.384	12.697	12.696	4.80				
5	58	2-Hexanone	250.837	0.3	4456863	0.410	0.409	12.860	12.855	7.59				
	59	Tetrachloroethene	48.575	-2.9	680077	0.313	0.322	12.875	12.878	7.46				
	60	1,3-Dichloropropane	44.342	-11.3	1404048	0.646	0.729	12.905	12.907	3.43				
	61	Dibromochloromethane	45.416	-9.2	913589	0.421	0.463	13.233	13.229	6.65				
	62	1,2-Dibromoethane	46.297	-7.4	837850	0.386	0.417	13.412	13.415	4.42				
	63	1-Chlorohexane	49.106	-1.8	1499661	0.690	0.703	13.724	13.715	6.63				
	64	Chlorobenzene	46.654	-6.7	2050389	0.944	1.012	13.918	13.917	6.32				
	65	Ethylbenzene	48.252	-3.5	4195241	1.931	2.001	13.948	13.948	9.32				
	66	1,1,1,2-Tetrachloroethane	49.521	-1.0	881580	0.406	0.410	13.993	13.983	4.67				
2	67	m-Xylene & p-Xylene	87.893	-12.1	6051591	1.393	1.585	14.067	14.063	10.28				
	68	o-Xylene	45.856	-8.3	3338415	1.537	1.676	14.559	14.552	8.08				
	69	Styrene	48.322	-3.4	2377191	1.094	1.132	14.574	14.570	9.23				
	70	1,2-DICHLOROBENZENE-D4	50.000	0	1032508	1	1	17.210	17.202	0				
	71	Bromoform	45.584	-8.8	604649	0.586	0.642	14.931	14.932	10.42				
	72	Isopropylbenzene	50.805	1.6	3578207	3.466	3.411	14.946	14.938	7.59				
	73	4-Bromofluorobenzene	49.877	-0.2	1267130	1.227	1.230	15.229	15.219	14.66				
	74	1,1,2,2-Tetrachloroethane	48.651	-2.7	1343821	1.302	1.338	15.348	15.344	5.00				
	75	trans-1,4-Dichloro-2-butene	49.076	-1.8	383441	0.371	0.378	15.393	15.385	11.58				
	76	n-Propylbenzene	51.584	3.2	5320737	5.153	4.995	15.438	15.431	9.64				
	77	1,2,3-Trichloropropane	50.558	1.1	279479	0.271	0.268	15.453	15.447	6.64				
	78	Bromobenzene	46.568	-6.9	1002515	0.971	1.043	15.482	15.479	6.92				
	79	1,3,5-Trimethylbenzene	53.230	6.5	3102736	3.005	2.823	15.601	15.598	7.06				
	80	2-Chlorotoluene	50.847	1.7	3424016	3.316	3.261	15.646	15.644	6.74				
	81	4-Chlorotoluene	50.257	0.5	3090456	2.993	2.978	15.765	15.762	6.83				
	82	tert-Butylbenzene	53.542	7.1	646787	0.626	0.585	16.048	16.045	10.18				
	83	1,2,4-Trimethylbenzene	51.786	3.6	3083898	2.987	2.884	16.108	16.100	7.44				
	84	sec-Butylbenzene	55.074	10.1	4204470	4.072	3.697	16.316	16.308	6.95				
	85	p-Isopropyltoluene	53.484	7.0	3010582	2.916	2.726	16.451	16.445	8.85				
	86	1,3-Dichlorobenzene	50.536	1.1	1750713	1.696	1.678	16.615	16.600	7.68				
	87	1,4-Dichlorobenzene	50.770	1.5	1731933	1.677	1.652	16.704	16.703	10.77				
	88	n-Butylbenzene	55.951	11.9	3511338	3.401	3.039	16.987	16.973	7.15				
	89	1,2-Dichlorobenzene	49.470	-1.1	1562946	1.514	1.530	17.240	17.228	8.12				
	90	1,2-Dibromo-3-chloropropane	48.646	-2.7	173016	0.168	0.172	18.298	18.293	10.18				
	91	1,2,4-Trichlorobenzene	55.650	11.3	718476	0.696	0.625	19.490	19.480	11.11				
	92	Hexachlorobutadiene	53.977	8.0	442713	0.429	0.397	19.609	19.605	8.45				
	93	Naphthalene	54.988	10.0	1631499	1.580	1.437	19.966	19.960	12.80				
	94	1,2,3-Trichlorobenzene	54.246	8.5	583226	0.565	0.521	20.368	20.363	9.58				

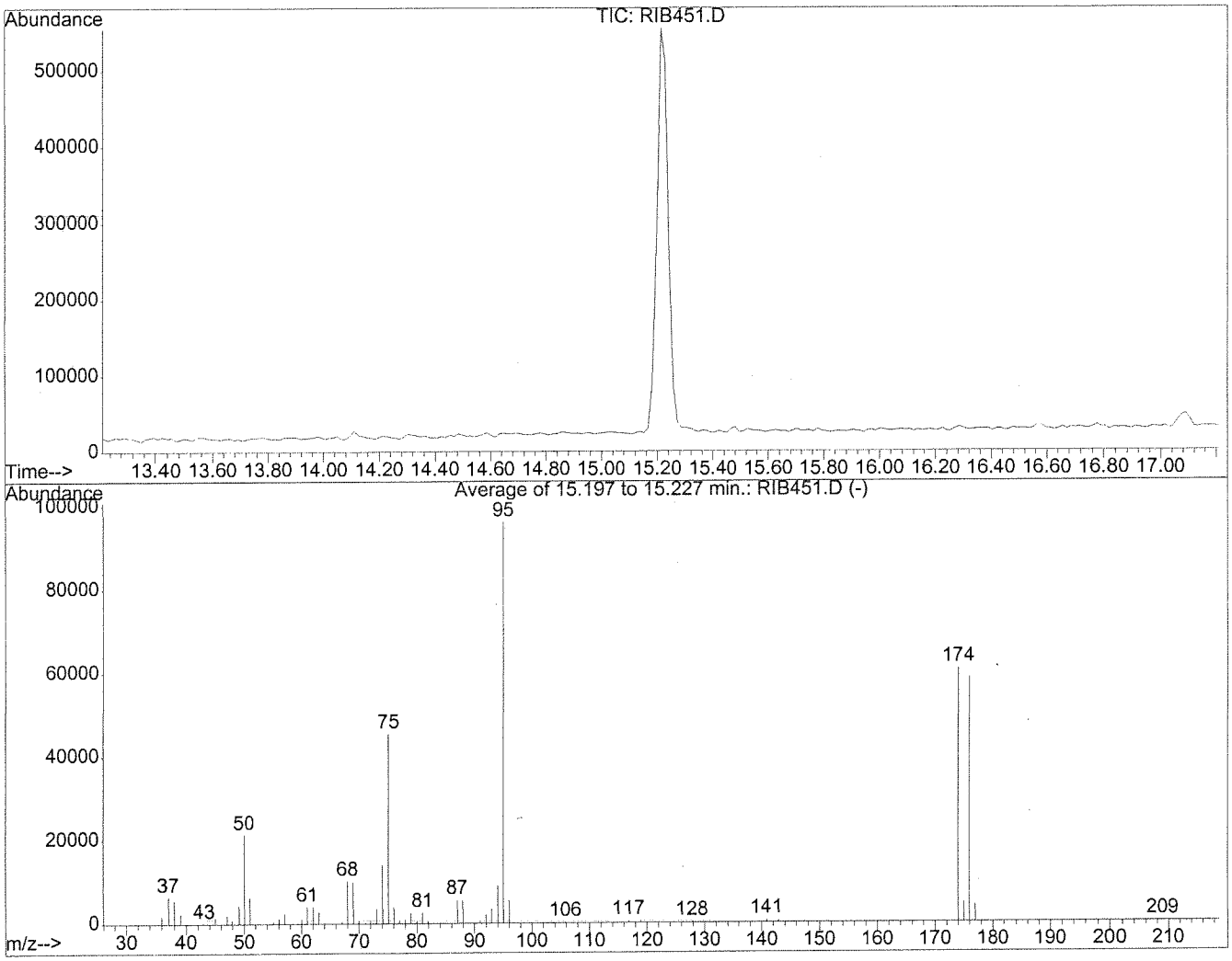
Spike Amount = Nominal Amount * M

Sa
10/9/15

BFB

Data File : D:\HPCHEM\1\DATA\15I27\RIB451.D
Acq On : 27 Sep 2015 11:19 am
Sample : BFB03I20
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL

Vial: 1
Operator: CMendo
Inst : 03
Multiplr: 1.00



AutoFind: Scans 763, 764, 765; Background Corrected with Scan 759

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.2	21293	PASS
75	95	30	60	47.3	45445	PASS
95	95	100	100	100.0	96101	PASS
96	95	5	9	5.8	5529	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	63.2	60773	PASS
175	174	5	9	7.7	4659	PASS
176	174	95	101	96.6	58685	PASS
177	176	5	9	6.8	4012	PASS

RIB451.D VO03I25.M Wed Oct 07 21:14:44 2015 SW 10/9/15

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Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D
Acq On : 27 Sep 2015 11:52 am
Sample : IVO03I252
Misc : 50ppb 8260/250ppb TBA-KET-A-An
MS Integration Params: RTE.P

Vial: 2
Operator: CMendo
Inst : 03
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	124	-0.01
2	T,M	Chlorotrifluoroethylene	50.000	55.128	-10.3	128	-0.01
3	T,M	Dichlorodifluoromethane	50.000	50.705	-1.4	123	0.00
4	P,T,M	Chloromethane	50.000	47.317	5.4	110	-0.01
5	C,T,M	Vinyl chloride	50.000	50.373	-0.7	118	-0.01
6	T,M	2-Chloro-1,1,1-trifluoroeth	50.000	54.213	-8.4	126	-0.01
7	T,M	Bromomethane	50.000	46.630	6.7	119	-0.01
8	T,M	Chloroethane	50.000	51.671	-3.3	135	-0.03
9	T,M	Dichlorofluoromethane	50.000	47.257	5.5	114	-0.01
10	T,M	Trichlorofluoromethane	50.000	52.986	-6.0	127	0.00
11	T,M	Acrolein	250.000	232.278	7.1	118	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	50.000	45.630	8.7	106	-0.01
13	C,T,M	1,1-Dichloroethene	50.000	46.670	6.7	107	-0.01
14	T,M	Acetone	250.000	219.449	12.2	115	-0.01
15	T,M	Iodomethane	50.000	45.504	9.0	107	-0.01
16	T,M	Carbon disulfide	50.000	48.511	3.0	108	0.00
17	T,M	Methyl acetate	50.000	48.335	3.3	111	-0.01
18	T,M	Methylene chloride	50.000	46.254	7.5	115	0.00
19	T,M	tert-Butyl alcohol	250.000	231.845	7.3	115	-0.01
20	T,M	tert-Butyl methyl ether (MT	50.000	46.048	7.9	110	0.00
21	T,M	trans-1,2-Dichloroethene	50.000	48.928	2.1	112	0.00
22	T,M	Acrylonitrile	250.000	260.177	-4.1	119	-0.01
23	T,M	Isopropyl ether (DIPE)	50.000	48.604	2.8	115	-0.01
24	T,M	Vinyl acetate	50.000	41.040	17.9	100	-0.01
25	P,T,M	1,1-Dichloroethane	50.000	48.839	2.3	116	-0.01
26	T,M	tert-Butyl ethyl ether (ETB	50.000	45.259	9.5	106	-0.01
27	T,M	2-Butanone	250.000	249.283	0.3	115	-0.01
28	T,M	2,2-Dichloropropane	50.000	50.568	-1.1	119	-0.01
29	T,M	cis-1,2-Dichloroethene	50.000	47.240	5.5	111	-0.01
30	T,M	2-Butanol	250.000	252.036	-0.8	126	-0.01
31	T,M	Bromochloromethane	50.000	46.286	7.4	112	0.00
32	T,M	Tetrahydrofuran	50.000	47.457	5.1	120	0.00
33	C,T,M	Chloroform	50.000	45.121	9.8	108	-0.01
34	S	Dibromofluoromethane	50.000	50.369	-0.7	110	-0.01
35	T,M	1,1,1-Trichloroethane	50.000	45.293	9.4	108	0.00
36	T,M	Cyclohexane	50.000	50.929	-1.9	120	0.00
37	T,M	1,1-Dichloropropene	50.000	49.664	0.7	117	0.00
38	T,M	Carbon tetrachloride	50.000	46.373	7.3	108	-0.01
39	S	1,2-Dichloroethane-d4	50.000	47.321	5.4	103	-0.01
40	T,M	tert-Amyl methyl ether (TAM	50.000	44.291	11.4	100	0.00
41	T,M	Benzene	50.000	46.747	6.5	108	-0.01

(#) = Out of Range

Sa 10/9/15

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	50.000	41.583	16.8	97	0.00
43	T,M	Trichloroethene	50.000	49.860	0.3	116	0.00
44	T,M	Methylcyclohexane	50.000	49.939	0.1	114	0.00
45	C,T,M	1,2-Dichloropropane	50.000	48.165	3.7	113	0.00
46	T,M	1,4-Dioxane	1000.000	930.356	7.0	114	0.00
47	T,M	Dibromomethane	50.000	44.820	10.4	104	0.00
48	T,M	Bromodichloromethane	50.000	44.807	10.4	104	0.00
49	T,M	2-Chloroethyl vinyl ether	50.000	46.047	7.9	112	-0.01
50	T,M	cis-1,3-Dichloropropene	50.000	45.585	8.8	105	0.00
51	T,M	4-Methyl-2-pentanone	250.000	237.174	5.1	113	0.00
52	I	CHLOROBENZENE-D5	50.000	50.000	0.0	121	0.00
53	S	Toluene-d8	50.000	53.404	-6.8	112	0.00
54	C,T,M	Toluene	50.000	45.351	9.3	105	0.00
55	T,M	Ethyl methacrylate	50.000	46.569	6.9	107	0.00
56	T,M	trans-1,3-Dichloropropene	50.000	44.916	10.2	106	0.00
57	T,M	1,1,2-Trichloroethane	50.000	45.961	8.1	112	0.00
58	T,M	2-Hexanone	250.000	250.837	-0.3	115	0.00
59	T,M	Tetrachloroethene	50.000	48.575	2.8	120	0.00
60	T,M	1,3-Dichloropropane	50.000	44.342	11.3	104	0.00
61	T,M	Dibromochloromethane	50.000	45.416	9.2	102	0.00
62	T,M	1,2-Dibromoethane	50.000	46.297	7.4	107	0.00
63	T,M	1-Chlorohexane	50.000	49.106	1.8	115	0.02
64	P,M	Chlorobenzene	50.000	46.654	6.7	105	0.00
65	C,T,M	Ethylbenzene	50.000	48.252	3.5	106	0.00
66	T,M	1,1,1,2-Tetrachloroethane	50.000	49.521	1.0	109	0.02
67	T,M	m-Xylene & p-Xylene	100.000	87.893	12.1	103	0.00
68	T,M	o-Xylene	50.000	45.856	8.3	105	0.00
69	T,M	Styrene	50.000	48.322	3.4	108	0.00
70	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	107	0.02
71	P,T,M	Bromoform	50.000	45.585	8.8	100	0.00
72	T,M	Isopropylbenzene	50.000	50.805	-1.6	110	0.02
73	S	4-Bromofluorobenzene	50.000	49.877	0.2	108	0.02
74	P,T,M	1,1,2,2-Tetrachloroethane	50.000	48.651	2.7	106	0.00
75	T,M	trans-1,4-Dichloro-2-butene	50.000	49.076	1.8	111	0.02
76	T,M	n-Propylbenzene	50.000	51.584	-3.2	110	0.00
77	T,M	1,2,3-Trichloropropane	50.000	50.558	-1.1	111	0.00
78	T,M	Bromobenzene	50.000	46.568	6.9	103	0.00
79	T,M	1,3,5-Trimethylbenzene	50.000	53.230	-6.5	114	0.00
80	T,M	2-Chlorotoluene	50.000	50.847	-1.7	110	0.00

(#) = Out of Range

SU 10/9/15

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	4-Chlorotoluene	50.000	50.257	-0.5	109	0.00
82	T,M	tert-Butylbenzene	50.000	53.542	-7.1	120	0.00
83	T,M	1,2,4-Trimethylbenzene	50.000	51.786	-3.6	111	0.02
84	T,M	sec-Butylbenzene	50.000	55.074	-10.1	120	0.02
85	T,M	p-Isopropyltoluene	50.000	53.484	-7.0	115	0.00
86	T,M	1,3-Dichlorobenzene	50.000	50.536	-1.1	107	0.02
87	T,M	1,4-Dichlorobenzene	50.000	50.770	-1.5	110	0.00
88	T,M	n-Butylbenzene	50.000	55.951	-11.9	117	0.02
89	T,M	1,2-Dichlorobenzene	50.000	49.470	1.1	105	0.02
90	T,M	1,2-Dibromo-3-chloropropane	50.000	48.646	2.7	107	0.00
91	T,M	1,2,4-Trichlorobenzene	50.000	55.650	-11.3	113	0.02
92	T,M	Hexachlorobutadiene	50.000	53.977	-8.0	111	0.00
93	T,M	Naphthalene	50.000	54.988	-10.0	113	0.00
94	T,M	1,2,3-Trichlorobenzene	50.000	54.246	-8.5	110	0.02

Sa 10/9/15

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

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	124	-0.01
2	T,M	Chlorotrifluoroethylene	0.102	0.112	-9.8	128	-0.01
3	T,M	Dichlorodifluoromethane	0.297	0.301	-1.3	123	0.00
4	P,T,M	Chloromethane	0.327	0.309	5.5	110	-0.01
5	C,T,M	Vinyl chloride	0.258	0.260	-0.8	118	-0.01
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.142	0.154	-8.5	126	-0.01
7	T,M	Bromomethane	0.267	0.249	6.7	119	-0.01
8	T,M	Chloroethane	0.163	0.169	-3.7	135	-0.03
9	T,M	Dichlorofluoromethane	0.743	0.702	5.5	114	-0.01
10	T,M	Trichlorofluoromethane	0.423	0.448	-5.9	127	0.00
11	T,M	Acrolein	0.051	0.045	11.8	118	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.188	0.172	8.5	106	-0.01
13	C,T,M	1,1-Dichloroethene	0.599	0.559	6.7	107	-0.01
14	T,M	Acetone	0.145	0.127	12.4	115	-0.01
15	T,M	Iodomethane	0.724	0.659	9.0	107	-0.01
16	T,M	Carbon disulfide	1.450	1.407	3.0	108	0.00
17	T,M	Methyl acetate	0.297	0.287	3.4	111	-0.01
18	T,M	Methylene chloride	0.723	0.669	7.5	115	0.00
19	T,M	tert-Butyl alcohol	0.043	0.040	7.0	115	-0.01
20	T,M	tert-Butyl methyl ether (MT	1.046	0.963	7.9	110	0.00
21	T,M	trans-1,2-Dichloroethene	0.617	0.604	2.1	112	0.00
22	T,M	Acrylonitrile	0.121	0.126	-4.1	119	-0.01
23	T,M	Isopropyl ether (DIPE)	1.641	1.595	2.8	115	-0.01
24	T,M	Vinyl acetate	1.084	0.890	17.9	100	-0.01
25	P,T,M	1,1-Dichloroethane	0.813	0.794	2.3	116	-0.01
26	T,M	tert-Butyl ethyl ether (ETB	1.352	1.224	9.5	106	-0.01
27	T,M	2-Butanone	0.229	0.228	0.4	115	-0.01
28	T,M	2,2-Dichloropropane	0.543	0.549	-1.1	119	-0.01
29	T,M	cis-1,2-Dichloroethene	0.447	0.422	5.6	111	-0.01
30	T,M	2-Butanol	0.043	0.043	0.0	126	-0.01
31	T,M	Bromochloromethane	0.595	0.551	7.4	112	0.00
32	T,M	Tetrahydrofuran	0.127	0.121	4.7	120	0.00
33	C,T,M	Chloroform	0.884	0.798	9.7	108	-0.01
34	S	Dibromofluoromethane	0.417	0.420	-0.7	110	-0.01
35	T,M	1,1,1-Trichloroethane	0.601	0.545	9.3	108	0.00
36	T,M	Cyclohexane	0.418	0.426	-1.9	120	0.00
37	T,M	1,1-Dichloropropene	0.165	0.163	1.2	117	0.00
38	T,M	Carbon tetrachloride	0.470	0.436	7.2	108	-0.01
39	S	1,2-Dichloroethane-d4	0.502	0.475	5.4	103	-0.01
40	T,M	tert-Amyl methyl ether (TAM	0.244	0.216	11.5	100	0.00
41	T,M	Benzene	1.532	1.432	6.5	108	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.629	0.523	16.9	97	0.00
43	T,M	Trichloroethene	0.390	0.389	0.3	116	0.00
44	T,M	Methylcyclohexane	0.487	0.487	0.0	114	0.00
45	C,T,M	1,2-Dichloropropane	0.481	0.464	3.5	113	0.00
46	T,M	1,4-Dioxane	0.004	0.004	0.0	114	0.00
47	T,M	Dibromomethane	0.341	0.305	10.6	104	0.00
48	T,M	Bromodichloromethane	0.715	0.640	10.5	104	0.00
49	T,M	2-Chloroethyl vinyl ether	0.282	0.260	7.8	112	-0.01
50	T,M	cis-1,3-Dichloropropene	0.863	0.786	8.9	105	0.00
51	T,M	4-Methyl-2-pentanone	0.580	0.550	5.2	113	0.00
52	I	CHLOROBENZENE-D5	1.000	1.000	0.0	121	0.00
53	S	Toluene-d8	1.207	1.290	-6.9	112	0.00
54	C,T,M	Toluene	1.664	1.510	9.3	105	0.00
55	T,M	Ethyl methacrylate	0.584	0.544	6.8	107	0.00
56	T,M	trans-1,3-Dichloropropene	0.762	0.685	10.1	106	0.00
57	T,M	1,1,2-Trichloroethane	0.384	0.353	8.1	112	0.00
58	T,M	2-Hexanone	0.409	0.410	-0.2	115	0.00
59	T,M	Tetrachloroethene	0.322	0.313	2.8	120	0.00
60	T,M	1,3-Dichloropropane	0.729	0.646	11.4	104	0.00
61	T,M	Dibromochloromethane	0.463	0.421	9.1	102	0.00
62	T,M	1,2-Dibromoethane	0.417	0.386	7.4	107	0.00
63	T,M	1-Chlorohexane	0.703	0.690	1.8	115	0.02
64	P,M	Chlorobenzene	1.012	0.944	6.7	105	0.00
65	C,T,M	Ethylbenzene	2.001	1.931	3.5	106	0.00
66	T,M	1,1,1,2-Tetrachloroethane	0.410	0.406	1.0	109	0.02
67	T,M	m-Xylene & p-Xylene	1.585	1.393	12.1	103	0.00
68	T,M	o-Xylene	1.676	1.537	8.3	105	0.00
69	T,M	Styrene	1.132	1.094	3.4	108	0.00
70	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	107	0.02
71	P,T,M	Bromoform	0.642	0.586	8.7	100	0.00
72	T,M	Isopropylbenzene	3.411	3.466	-1.6	110	0.02
73	S	4-Bromofluorobenzene	1.230	1.227	0.2	108	0.02
74	P,T,M	1,1,2,2-Tetrachloroethane	1.338	1.302	2.7	106	0.00
75	T,M	trans-1,4-Dichloro-2-butene	0.378	0.371	1.9	111	0.02
76	T,M	n-Propylbenzene	4.995	5.153	-3.2	110	0.00
77	T,M	1,2,3-Trichloropropane	0.268	0.271	-1.1	111	0.00
78	T,M	Bromobenzene	1.043	0.971	6.9	103	0.00
79	T,M	1,3,5-Trimethylbenzene	2.823	3.005	-6.4	114	0.00
80	T,M	2-Chlorotoluene	3.261	3.316	-1.7	110	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	4-Chlorotoluene	2.978	2.993	-0.5	109	0.00
82	T,M	tert-Butylbenzene	0.585	0.626	-7.0	120	0.00
83	T,M	1,2,4-Trimethylbenzene	2.884	2.987	-3.6	111	0.02
84	T,M	sec-Butylbenzene	3.697	4.072	-10.1	120	0.02
85	T,M	p-Isopropyltoluene	2.726	2.916	-7.0	115	0.00
86	T,M	1,3-Dichlorobenzene	1.678	1.696	-1.1	107	0.02
87	T,M	1,4-Dichlorobenzene	1.652	1.677	-1.5	110	0.00
88	T,M	n-Butylbenzene	3.039	3.401	-11.9	117	0.02
89	T,M	1,2-Dichlorobenzene	1.530	1.514	1.0	105	0.02
90	T,M	1,2-Dibromo-3-chloropropane	0.172	0.168	2.3	107	0.00
91	T,M	1,2,4-Trichlorobenzene	0.625	0.696	-11.4	113	0.02
92	T,M	Hexachlorobutadiene	0.397	0.429	-8.1	111	0.00
93	T,M	Naphthalene	1.437	1.580	-10.0	113	0.00
94	T,M	1,2,3-Trichlorobenzene	0.521	0.565	-8.4	110	0.02

Su
10/9/15

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IV003I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Sep 27 12:13 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.36	114	2193017	50.00	ug/l	-0.01
52) CHLOROBENZENE-D5	13.89	117	2172313	50.00	ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	17.21	152	1032508	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.51	111	921427	50.37	ug/l	-0.01
Spiked Amount 50.000			Recovery	=	100.74%	
39) 1,2-Dichloroethane-d4	9.94	65	1041105	47.32	ug/l	-0.01
Spiked Amount 50.000			Recovery	=	94.64%	
53) Toluene-d8	12.13	98	2801520	53.40	ug/l	0.00
Spiked Amount 50.000			Recovery	=	106.80%	
73) 4-Bromofluorobenzene	15.23	95	1267130	49.88	ug/l	0.02
Spiked Amount 50.000			Recovery	=	99.76%	
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.95	116	246179	55.13	ug/l	99
3) Dichlorodifluoromethane	4.04	85	660809	50.71	ug/l	98
4) Chloromethane	4.40	50	678287	47.32	ug/l	99
5) Vinyl chloride	4.64	62	569348	50.37	ug/l	98
6) 2-Chloro-1,1,1-trifluoroet	4.79	118	338199	54.21	ug/l	95
7) Bromomethane	5.26	94	546545	46.63	ug/l	99
8) Chloroethane	5.43	64	370158	51.67	ug/l	96
9) Dichlorofluoromethane	5.74	67	1539314	47.26	ug/l	100
10) Trichlorofluoromethane	5.81	101	982139	52.99	ug/l	100
11) Acrolein	6.50	56	496439	232.28	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	6.57	151	377091	45.63	ug/l	99
13) 1,1-Dichloroethene	6.62	61	1226881	46.67	ug/l	99
14) Acetone	6.69	43	1391146	219.45	ug/l	97
15) Iodomethane	6.92	142	1445324	45.50	ug/l	100
16) Carbon disulfide	7.04	76	3086115	48.51	ug/l	100
17) Methyl acetate	7.11	43	629273	48.34	ug/l	100
18) Methylene chloride	7.32	49	1466154	46.25	ug/l	99
19) tert-Butyl alcohol	7.36	59	438074	231.84	ug/l	96
20) tert-Butyl methyl ether (M	7.59	73	2111973	46.05	ug/l	98
21) trans-1,2-Dichloroethene	7.66	61	1324046	48.93	ug/l	99
22) Acrylonitrile	7.65	53	1382581	260.18	ug/l	100
23) Isopropyl ether (DIPE)	8.12	45	3497403	48.60	ug/l	97
24) Vinyl acetate	8.17	43	1951360	41.04	ug/l	98
25) 1,1-Dichloroethane	8.21	63	1742108	48.84	ug/l	99
26) tert-Butyl ethyl ether (ET	8.59	59	2684322	45.26	ug/l	97
27) 2-Butanone	8.90	43	2500131	249.28	ug/l	100
28) 2,2-Dichloropropane	8.93	77	1203788	50.57	ug/l	100

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

Sa 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D
Acq On : 27 Sep 2015 11:52 am
Sample : IVO03I252
Misc : 50ppb 8260/250ppb TBA-KET-A-An
MS Integration Params: RTE.P
Quant Time: Sep 27 12:13 2015

Vial: 2
Operator: CMendo
Inst : 03
Multiplr: 1.00

Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	cis-1,2-Dichloroethene	8.94	96	926301	47.24 ug/l	99
30)	2-Butanol	9.05	45	474473	252.04 ug/l	98
31)	Bromochloromethane	9.27	49	1208300	46.29 ug/l	99
32)	Tetrahydrofuran	9.30	42	265048	47.46 ug/l	99
33)	Chloroform	9.30	83	1750265	45.12 ug/l	100
35)	1,1,1-Trichloroethane	9.55	97	1194839	45.29 ug/l	99
36)	Cyclohexane	9.61	56	933639	50.93 ug/l	95
37)	1,1-Dichloropropene	9.73	110	358348	49.66 ug/l	99
38)	Carbon tetrachloride	9.75	119	956037	46.37 ug/l	98
40)	tert-Amyl methyl ether (TA	9.99	87	473249	44.29 ug/l	93
41)	Benzene	10.00	78	3140586	46.75 ug/l	100
42)	1,2-Dichloroethane	10.04	62	1147197	41.58 ug/l	98
43)	Trichloroethene	10.73	130	853247	49.86 ug/l	98
44)	Methylcyclohexane	10.94	83	1067193	49.94 ug/l	98
45)	1,2-Dichloropropane	11.03	63	1016809	48.17 ug/l	87
46)	1,4-Dioxane	11.15	88	171332	930.36 ug/l	98
47)	Dibromomethane	11.22	93	669542	44.82 ug/l	98
48)	Bromodichloromethane	11.34	83	1404199	44.81 ug/l	100
49)	2-Chloroethyl vinyl ether	11.55	63	569688	46.05 ug/l	99
50)	cis-1,3-Dichloropropene	11.82	75	1724539	45.59 ug/l	99
51)	4-Methyl-2-pentanone	11.89	43	6034289	237.17 ug/l	99
54)	Toluene	12.22	91	3279281	45.35 ug/l	100
55)	Ethyl methacrylate	12.38	69	1181514	46.57 ug/l	98
56)	trans-1,3-Dichloropropene	12.44	75	1487763	44.92 ug/l	99
57)	1,1,2-Trichloroethane	12.70	97	767315	45.96 ug/l	99
58)	2-Hexanone	12.86	43	4456863	250.84 ug/l	97
59)	Tetrachloroethene	12.88	164	680077	48.57 ug/l	98
60)	1,3-Dichloropropane	12.91	76	1404048	44.34 ug/l	100
61)	Dibromochloromethane	13.23	129	913589	45.42 ug/l	99
62)	1,2-Dibromoethane	13.41	107	837850	46.30 ug/l	100
63)	1-Chlorohexane	13.72	91	1499661	49.11 ug/l	100
64)	Chlorobenzene	13.92	112	2050389	46.65 ug/l	99
65)	Ethylbenzene	13.95	91	4195241	48.25 ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.99	131	881580	49.52 ug/l	99
67)	m-Xylene & p-Xylene	14.07	91	6051591	87.89 ug/l	98
68)	o-Xylene	14.56	91	3338415	45.86 ug/l	97
69)	Styrene	14.57	104	2377191	48.32 ug/l	99
71)	Bromoform	14.93	173	604649	45.58 ug/l	99
72)	Isopropylbenzene	14.95	105	3578207	50.80 ug/l	99
74)	1,1,2,2-Tetrachloroethane	15.35	83	1343821	48.65 ug/l	99
75)	trans-1,4-Dichloro-2-buten	15.39	53	383441	49.08 ug/l	95

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

SG 10/9/15

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Sep 27 12:13 2015 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
76)	n-Propylbenzene	15.44	91	5320737	51.58 ug/l		99
77)	1,2,3-Trichloropropane	15.45	110	279479	50.56 ug/l		99
78)	Bromobenzene	15.48	156	1002515	46.57 ug/l		94
79)	1,3,5-Trimethylbenzene	15.60	105	3102736	53.23 ug/l		98
80)	2-Chlorotoluene	15.65	91	3424016	50.85 ug/l		98
81)	4-Chlorotoluene	15.77	91	3090456	50.26 ug/l		99
82)	tert-Butylbenzene	16.05	134	646787	53.54 ug/l	#	92
83)	1,2,4-Trimethylbenzene	16.11	105	3083898	51.79 ug/l		88
84)	sec-Butylbenzene	16.32	105	4204470	55.07 ug/l		99
85)	p-Isopropyltoluene	16.45	119	3010582	53.48 ug/l		97
86)	1,3-Dichlorobenzene	16.61	146	1750713	50.54 ug/l		100
87)	1,4-Dichlorobenzene	16.70	146	1731933	50.77 ug/l		99
88)	n-Butylbenzene	16.99	91	3511338	55.95 ug/l		99
89)	1,2-Dichlorobenzene	17.24	146	1562946	49.47 ug/l		99
90)	1,2-Dibromo-3-chloropropan	18.30	157	173016	48.65 ug/l		98
91)	1,2,4-Trichlorobenzene	19.49	180	718476	55.65 ug/l		99
92)	Hexachlorobutadiene	19.61	225	442713	53.98 ug/l		100
93)	Naphthalene	19.97	128	1631499	54.99 ug/l		100
94)	1,2,3-Trichlorobenzene	20.37	180	583226	54.25 ug/l		99

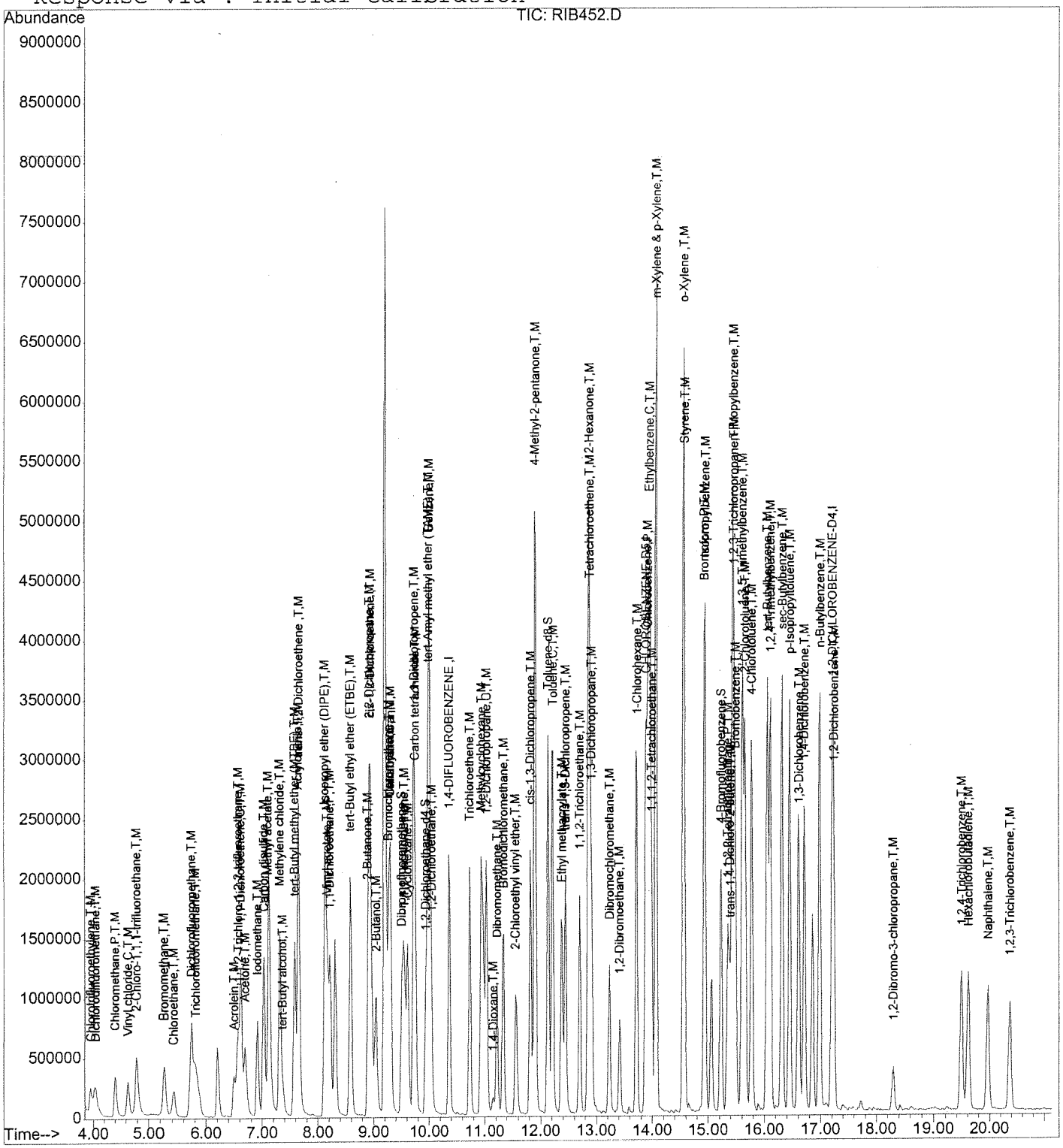
Su 10/9/15

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\15I27\RIB452.D Vial: 2
Acq On : 27 Sep 2015 11:52 am Operator: CMendo
Sample : IVO03I252 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Sep 27 12:13 2015 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Sun Sep 27 10:40:43 2015
Response via : Initial Calibration



S 10/9/15

SST

DAILY CALIBRATIONS

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RBB154
Instrument ID: 03
GC Column: ZB-624 ID:0.25mm (mm)

Contract: CANNON AFB PBR
SAS No.: SDG No.: 16B094
BFB Injection Date : 02/22/16
BFB Injection Time : 14:21
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.94
75	30.0 - 60.0% of mass 95	46.72
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.76
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	73.29
175	5.0 - 9.0% of mass 174	5.57(7.6)1
176	95.0 - 101.0% of mass 174	71.14(97.1)1
177	5.0 - 9.0% of mass 176	4.86(6.8)2

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

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	VSTD050	CV0031 2525	RBB156	02/22/16	15:30
2	MBLK1W	VS03B07B	RBB159	02/22/16	16:55
3	LCS1W	VS03B07L	RBB157	02/22/16	15:59
4	LCD1W	VS03B07C	RBB158	02/22/16	16:27
5	MBLK2W	TVB003SB	RBB160	02/22/16	17:23
6	CAFB-IDW-S-022016	B094-02	RBB161	02/22/16	17:51

FORM V VOA OLM02.0

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX INC.
Lab Code : EMXT
Lab File ID : RIB382
Instrument ID: 03
GC Column : ZB-624 ID:0.25mm (mm)

Project : CANNON AFB PBR
SDG No. : 16B094
Date Analyzed : 09/25/15
Time Analyzed : 01:16
Heated Purge : Yes

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	1767389	10.37	1796606	13.89	962172	17.19
	UPPER LIMIT	3534778	10.87	3593212	14.39	1924344	17.69
	LOWER LIMIT	883695	9.87	898303	13.39	481086	16.69
	SAMPLE ID						
1	VSTD050	1849904	10.35	1730345	13.86	793911	17.18
2	MBLK1W	2527933	10.35	2398618	13.86	907296	17.18
3	LCS1W	1955485	10.35	1854952	13.86	834276	17.18
4	LCD1W	2284816	10.35	2213650	13.86	905838	17.18
5	MBLK2W	2287742	10.35	2134055	13.86	819852	17.18
6	CAFB-IDW-S-022016	2504790	10.35	2329622	13.87	845322	17.17

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

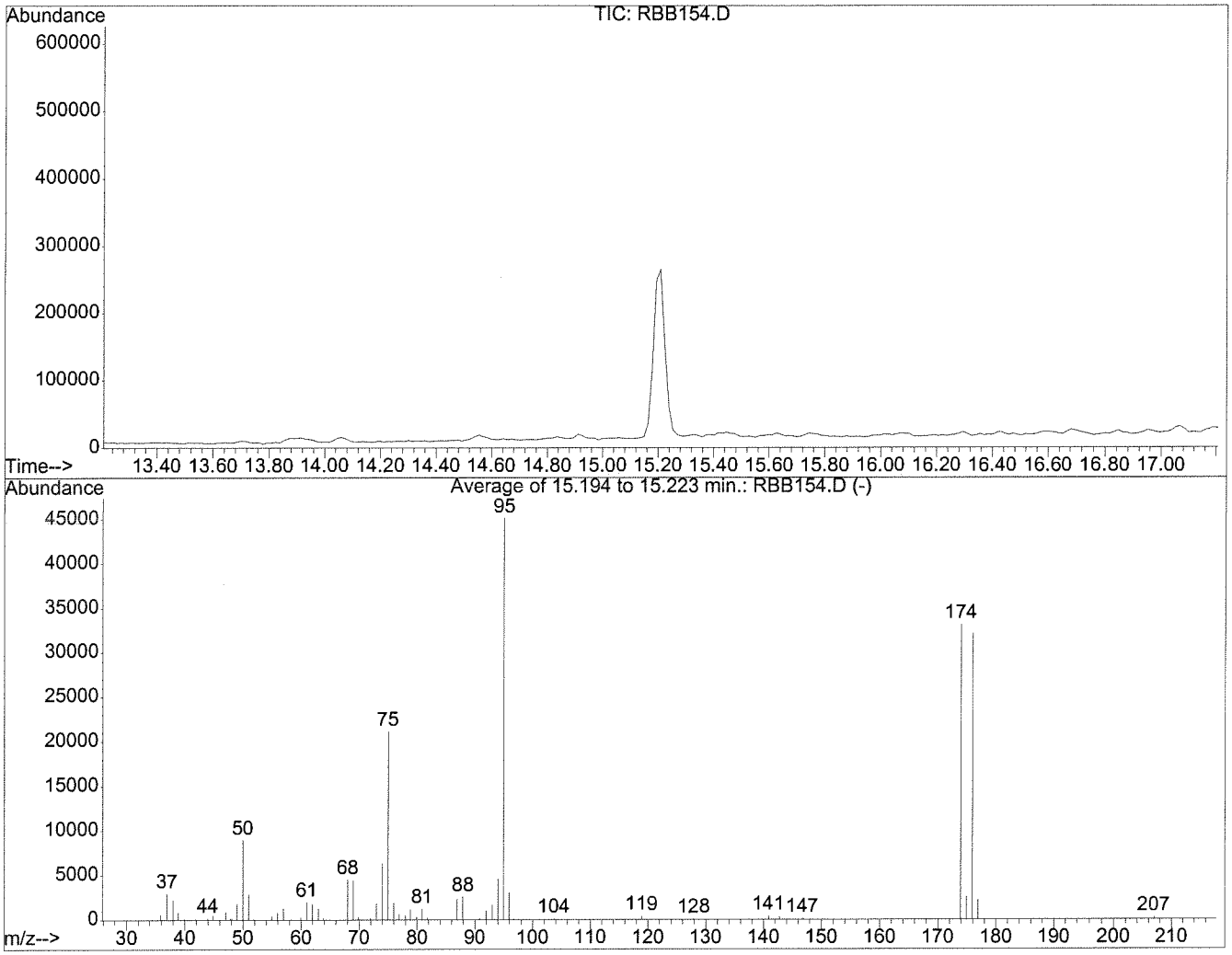
AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.5 minutes (30 sec) of internal standard RT
RT LOWER LIMIT = - 0.5 minutes (30 sec) of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

BFB

Data File : D:\HPCHEM\1\DATA\16B22\RBB154.D
Acq On : 22 Feb 2016 2:21 pm
Sample : BFB03B07
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL

Vial: 1
Operator: DNguye
Inst : 03
Multiplr: 1.00



AutoFind: Scans 763, 764, 765; Background Corrected with Scan 758

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	9009	PASS
75	95	30	60	46.7	21103	PASS
95	95	100	100	100.0	45171	PASS
96	95	5	9	6.8	3053	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.3	33107	PASS
175	174	5	9	7.6	2518	PASS
176	174	95	101	97.1	32136	PASS
177	176	5	9	6.8	2195	PASS

RBB154.D VO03I25.M Tue Feb 23 08:54:21 2016

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	105	0.03
2	T,M	Chlorotrifluoroethylene	50.000	0.000	100.0#	0	-3.92#
3	T,M	Dichlorodifluoromethane	50.000	50.840	-1.7	104	0.00
4	P,T,M	Chloromethane	50.000	45.160	9.7	89	0.01
5	C,T,M	Vinyl chloride	50.000	48.317	3.4	95	0.01
6	T,M	2-Chloro-1,1,1-trifluoroeth	50.000	0.000	100.0#	0	-4.75#
7	T,M	Bromomethane	50.000	43.043	13.9	92	0.01
8	T,M	Chloroethane	50.000	61.264	-22.5#	135	0.01
9	T,M	Dichlorofluoromethane	50.000	53.758	-7.5	110	0.01
10	T,M	Trichlorofluoromethane	50.000	50.936	-1.9	103	0.01
11	T,M	Acrolein	250.000	207.334	17.1	89	0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	50.000	52.279	-4.6	102	0.01
13	C,T,M	1,1-Dichloroethene	50.000	48.997	2.0	95	0.03
14	T,M	Acetone	250.000	221.339	11.5	98	0.01
15	T,M	Iodomethane	50.000	44.860	10.3	89	0.01
16	T,M	Carbon disulfide	50.000	48.384	3.2	91	0.01
17	T,M	Methyl acetate	50.000	0.000	100.0#	0	-7.07#
18	T,M	Methylene chloride	50.000	44.520	11.0	94	0.01
19	T,M	tert-Butyl alcohol	250.000	320.143	-28.1#	134	0.01
20	T,M	tert-Butyl methyl ether (MT	50.000	48.814	2.4	98	0.01
21	T,M	trans-1,2-Dichloroethene	50.000	48.984	2.0	95	0.01
22	T,M	Acrylonitrile	250.000	299.063	-19.6	115	0.01
23	T,M	Isopropyl ether (DIPE)	50.000	49.067	1.9	98	0.03
24	T,M	Vinyl acetate	50.000	65.175	-30.3#	134	0.03
25	P,T,M	1,1-Dichloroethane	50.000	46.619	6.8	93	0.03
26	T,M	tert-Butyl ethyl ether (ETB	50.000	49.603	0.8	98	0.01
27	T,M	2-Butanone	250.000	263.466	-5.4	103	0.01
28	T,M	2,2-Dichloropropane	50.000	49.523	1.0	98	0.01
29	T,M	cis-1,2-Dichloroethene	50.000	47.844	4.3	95	0.01
30	T,M	2-Butanol	250.000	0.000	100.0#	0	-9.01#
31	T,M	Bromochloromethane	50.000	45.349	9.3	93	0.03
32	T,M	Tetrahydrofuran	50.000	56.337	-12.7	121	0.03
33	C,T,M	Chloroform	50.000	43.074	13.9	87	0.01
34	S	Dibromofluoromethane	50.000	52.018	-4.0	96	0.01
35	T,M	1,1,1-Trichloroethane	50.000	44.353	11.3	89	0.01
36	T,M	Cyclohexane	50.000	0.000	100.0#	0	-9.58#
37	T,M	1,1-Dichloropropene	50.000	51.014	-2.0	101	0.01
38	T,M	Carbon tetrachloride	50.000	46.515	7.0	92	0.03
39	S	1,2-Dichloroethane-d4	50.000	47.297	5.4	87	0.01
40	T,M	tert-Amyl methyl ether (TAM	50.000	48.430	3.1	92	0.01
41	T,M	Benzene	50.000	48.516	3.0	95	0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	50.000	45.207	9.6	89	0.03
43	T,M	Trichloroethene	50.000	49.333	1.3	97	0.01
44	T,M	Methylcyclohexane	50.000	0.000	100.0#	0	-10.90#
45	C,T,M	1,2-Dichloropropane	50.000	48.352	3.3	96	0.03
46	T,M	1,4-Dioxane	1000.000	1021.785	-2.2	106	0.01
47	T,M	Dibromomethane	50.000	44.515	11.0	87	0.03
48	T,M	Bromodichloromethane	50.000	42.612	14.8	83	0.03
49	T,M	2-Chloroethyl vinyl ether	50.000	52.909	-5.8	108	0.01
50	T,M	cis-1,3-Dichloropropene	50.000	44.085	11.8	85	0.01
51	T,M	4-Methyl-2-pentanone	250.000	236.499	5.4	95	0.01
52	I	CHLOROBENZENE-D5	50.000	50.000	0.0	96	0.02
53	S	Toluene-d8	50.000	57.388	-14.8	96	0.01
54	C,T,M	Toluene	50.000	49.364	1.3	91	0.03
55	T,M	Ethyl methacrylate	50.000	53.513	-7.0	98	0.03
56	T,M	trans-1,3-Dichloropropene	50.000	46.859	6.3	88	0.03
57	T,M	1,1,2-Trichloroethane	50.000	50.105	-0.2	98	0.01
58	T,M	2-Hexanone	250.000	265.580	-6.2	97	0.03
59	T,M	Tetrachloroethene	50.000	47.735	4.5	94	0.01
60	T,M	1,3-Dichloropropane	50.000	49.950	0.1	93	0.01
61	T,M	Dibromochloromethane	50.000	49.792	0.4	90	0.02
62	T,M	1,2-Dibromoethane	50.000	50.628	-1.3	93	0.00
63	T,M	1-Chlorohexane	50.000	47.937	4.1	89	0.02
64	P,M	Chlorobenzene	50.000	52.867	-5.7	95	0.00
65	C,T,M	Ethylbenzene	50.000	48.304	3.4	84	0.00
66	T,M	1,1,1,2-Tetrachloroethane	50.000	49.786	0.4	87	0.02
67	T,M	m-Xylene & p-Xylene	100.000	91.616	8.4	85	0.00
68	T,M	o-Xylene	50.000	46.027	7.9	84	0.02
69	T,M	Styrene	50.000	52.212	-4.4	93	0.02
70	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	83	0.02
71	P,T,M	Bromoform	50.000	51.782	-3.6	87	0.00
72	T,M	Isopropylbenzene	50.000	52.882	-5.8	88	0.02
73	S	4-Bromofluorobenzene	50.000	52.849	-5.7	88	0.02
74	P,T,M	1,1,2,2-Tetrachloroethane	50.000	54.602	-9.2	92	0.02
75	T,M	trans-1,4-Dichloro-2-butene	50.000	56.653	-13.3	98	0.02
76	T,M	n-Propylbenzene	50.000	53.008	-6.0	87	0.02
77	T,M	1,2,3-Trichloropropane	50.000	61.516	-23.0#	104	0.02
78	T,M	Bromobenzene	50.000	46.863	6.3	79	0.02
79	T,M	1,3,5-Trimethylbenzene	50.000	53.111	-6.2	87	0.02
80	T,M	2-Chlorotoluene	50.000	50.496	-1.0	84	0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	4-Chlorotoluene	50.000	50.522	-1.0	85	0.02
82	T,M	tert-Butylbenzene	50.000	56.360	-12.7	97	0.02
83	T,M	1,2,4-Trimethylbenzene	50.000	53.070	-6.1	87	0.02
84	T,M	sec-Butylbenzene	50.000	54.183	-8.4	91	0.02
85	T,M	p-Isopropyltoluene	50.000	56.839	-13.7	94	0.02
86	T,M	1,3-Dichlorobenzene	50.000	51.153	-2.3	84	0.02
87	T,M	1,4-Dichlorobenzene	50.000	50.529	-1.1	84	0.02
88	T,M	n-Butylbenzene	50.000	54.952	-9.9	88	0.00
89	T,M	1,2-Dichlorobenzene	50.000	50.840	-1.7	83	0.00
90	T,M	1,2-Dibromo-3-chloropropane	50.000	57.792	-15.6	97	0.02
91	T,M	1,2,4-Trichlorobenzene	50.000	57.696	-15.4	90	0.02
92	T,M	Hexachlorobutadiene	50.000	55.451	-10.9	87	0.02
93	T,M	Naphthalene	50.000	59.870	-19.7	95	0.04
94	T,M	1,2,3-Trichlorobenzene	50.000	55.829	-11.7	87	0.02

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	105	0.03
2	T,M	Chlorotrifluoroethylene	0.102	0.000	100.0#	0#	-3.92#
3	T,M	Dichlorodifluoromethane	0.297	0.302	-1.7	104	0.00
4	P,T,M	Chloromethane	0.327	0.295	9.8	89	0.01
5	C,T,M	Vinyl chloride	0.258	0.249	3.5	95	0.01
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.142	0.000	100.0#	0#	-4.75#
7	T,M	Bromomethane	0.267	0.230	13.9	92	0.01
8	T,M	Chloroethane	0.163	0.200	-22.7#	135	0.01
9	T,M	Dichlorofluoromethane	0.743	0.798	-7.4	110	0.01
10	T,M	Trichlorofluoromethane	0.423	0.431	-1.9	103	0.01
11	T,M	Acrolein	0.051	0.040	21.6#	89	0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.188	0.197	-4.8	102	0.01
13	C,T,M	1,1-Dichloroethene	0.599	0.587	2.0	95	0.03
14	T,M	Acetone	0.145	0.128	11.7	98	0.01
15	T,M	Iodomethane	0.724	0.650	10.2	89	0.01
16	T,M	Carbon disulfide	1.450	1.404	3.2	91	0.01
17	T,M	Methyl acetate	0.297	0.000	100.0#	0#	-7.07#
18	T,M	Methylene chloride	0.723	0.643	11.1	94	0.01
19	T,M	tert-Butyl alcohol	0.043	0.055	-27.9#	134	0.01
20	T,M	tert-Butyl methyl ether (MT	1.046	1.021	2.4	98	0.01
21	T,M	trans-1,2-Dichloroethene	0.617	0.604	2.1	95	0.01
22	T,M	Acrylonitrile	0.121	0.145	-19.8	115	0.01
23	T,M	Isopropyl ether (DIPE)	1.641	1.610	1.9	98	0.03
24	T,M	Vinyl acetate	1.084	1.413	-30.4#	134	0.03
25	P,T,M	1,1-Dichloroethane	0.813	0.758	6.8	93	0.03
26	T,M	tert-Butyl ethyl ether (ETB	1.352	1.342	0.7	98	0.01
27	T,M	2-Butanone	0.229	0.241	-5.2	103	0.01
28	T,M	2,2-Dichloropropane	0.543	0.538	0.9	98	0.01
29	T,M	cis-1,2-Dichloroethene	0.447	0.428	4.3	95	0.01
30	T,M	2-Butanol	0.043	0.000	100.0#	0#	-9.01#
31	T,M	Bromochloromethane	0.595	0.540	9.2	93	0.03
32	T,M	Tetrahydrofuran	0.127	0.143	-12.6	121	0.03
33	C,T,M	Chloroform	0.884	0.762	13.8	87	0.01
34	S	Dibromofluoromethane	0.417	0.434	-4.1	96	0.01
35	T,M	1,1,1-Trichloroethane	0.601	0.534	11.1	89	0.01
36	T,M	Cyclohexane	0.418	0.000	100.0#	0#	-9.58#
37	T,M	1,1-Dichloropropene	0.165	0.168	-1.8	101	0.01
38	T,M	Carbon tetrachloride	0.470	0.437	7.0	92	0.03
39	S	1,2-Dichloroethane-d4	0.502	0.474	5.6	87	0.01
40	T,M	tert-Amyl methyl ether (TAM	0.244	0.236	3.3	92	0.01
41	T,M	Benzene	1.532	1.486	3.0	95	0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.629	0.569	9.5	89	0.03
43	T,M	Trichloroethene	0.390	0.385	1.3	97	0.01
44	T,M	Methylcyclohexane	0.487	0.000	100.0#	0#	-10.90#
45	C,T,M	1,2-Dichloropropane	0.481	0.465	3.3	96	0.03
46	T,M	1,4-Dioxane	0.004	0.004	0.0	106	0.01
47	T,M	Dibromomethane	0.341	0.303	11.1	87	0.03
48	T,M	Bromodichloromethane	0.715	0.609	14.8	83	0.03
49	T,M	2-Chloroethyl vinyl ether	0.282	0.298	-5.7	108	0.01
50	T,M	cis-1,3-Dichloropropene	0.863	0.760	11.9	85	0.01
51	T,M	4-Methyl-2-pentanone	0.580	0.549	5.3	95	0.01
52	I	CHLOROBENZENE-D5	1.000	1.000	0.0	96	0.02
53	S	Toluene-d8	1.207	1.386	-14.8	96	0.01
54	C,T,M	Toluene	1.664	1.643	1.3	91	0.03
55	T,M	Ethyl methacrylate	0.584	0.625	-7.0	98	0.03
56	T,M	trans-1,3-Dichloropropene	0.762	0.715	6.2	88	0.03
57	T,M	1,1,2-Trichloroethane	0.384	0.385	-0.3	98	0.01
58	T,M	2-Hexanone	0.409	0.434	-6.1	97	0.03
59	T,M	Tetrachloroethene	0.322	0.308	4.3	94	0.01
60	T,M	1,3-Dichloropropane	0.729	0.728	0.1	93	0.01
61	T,M	Dibromochloromethane	0.463	0.461	0.4	90	0.02
62	T,M	1,2-Dibromoethane	0.417	0.422	-1.2	93	0.00
63	T,M	1-Chlorohexane	0.703	0.674	4.1	89	0.02
64	P,M	Chlorobenzene	1.012	1.070	-5.7	95	0.00
65	C,T,M	Ethylbenzene	2.001	1.933	3.4	84	0.00
66	T,M	1,1,1,2-Tetrachloroethane	0.410	0.408	0.5	87	0.02
67	T,M	m-Xylene & p-Xylene	1.585	1.452	8.4	85	0.00
68	T,M	o-Xylene	1.676	1.543	7.9	84	0.02
69	T,M	Styrene	1.132	1.182	-4.4	93	0.02
70	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	83	0.02
71	P,T,M	Bromoform	0.642	0.665	-3.6	87	0.00
72	T,M	Isopropylbenzene	3.411	3.607	-5.7	88	0.02
73	S	4-Bromofluorobenzene	1.230	1.300	-5.7	88	0.02
74	P,T,M	1,1,2,2-Tetrachloroethane	1.338	1.461	-9.2	92	0.02
75	T,M	trans-1,4-Dichloro-2-butene	0.378	0.429	-13.5	98	0.02
76	T,M	n-Propylbenzene	4.995	5.296	-6.0	87	0.02
77	T,M	1,2,3-Trichloropropane	0.268	0.329	-22.8#	104	0.02
78	T,M	Bromobenzene	1.043	0.977	6.3	79	0.02
79	T,M	1,3,5-Trimethylbenzene	2.823	2.998	-6.2	87	0.02
80	T,M	2-Chlorotoluene	3.261	3.293	-1.0	84	0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	4-Chlorotoluene	2.978	3.009	-1.0	85	0.02
82	T,M	tert-Butylbenzene	0.585	0.659	-12.6	97	0.02
83	T,M	1,2,4-Trimethylbenzene	2.884	3.061	-6.1	87	0.02
84	T,M	sec-Butylbenzene	3.697	4.006	-8.4	91	0.02
85	T,M	p-Isopropyltoluene	2.726	3.099	-13.7	94	0.02
86	T,M	1,3-Dichlorobenzene	1.678	1.716	-2.3	84	0.02
87	T,M	1,4-Dichlorobenzene	1.652	1.669	-1.0	84	0.02
88	T,M	n-Butylbenzene	3.039	3.340	-9.9	88	0.00
89	T,M	1,2-Dichlorobenzene	1.530	1.556	-1.7	83	0.00
90	T,M	1,2-Dibromo-3-chloropropane	0.172	0.199	-15.7	97	0.02
91	T,M	1,2,4-Trichlorobenzene	0.625	0.721	-15.4	90	0.02
92	T,M	Hexachlorobutadiene	0.397	0.440	-10.8	87	0.02
93	T,M	Naphthalene	1.437	1.720	-19.7	95	0.04
94	T,M	1,2,3-Trichlorobenzene	0.521	0.581	-11.5	87	0.02

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.35	114	1849904	50.00	ug/l	0.03
52) CHLOROBENZENE-D5	13.86	117	1730345	50.00	ug/l	0.02
70) 1,2-DICHLOROBENZENE-D4	17.18	152	793911	50.00	ug/l	0.02
System Monitoring Compounds						
34) Dibromofluoromethane	9.48	111	802707	52.02	ug/l	0.01
Spiked Amount 50.000			Recovery	=	104.04%	
39) 1,2-Dichloroethane-d4	9.92	65	877772	47.30	ug/l	0.01
Spiked Amount 50.000			Recovery	=	94.60%	
53) Toluene-d8	12.11	98	2398031	57.39	ug/l	0.01
Spiked Amount 50.000			Recovery	=	114.78%	
73) 4-Bromofluorobenzene	15.20	95	1032361	52.85	ug/l	0.02
Spiked Amount 50.000			Recovery	=	105.70%	
Target Compounds						Qvalue
3) Dichlorodifluoromethane	4.01	85	558907	50.84	ug/l	99
4) Chloromethane	4.38	50	546085	45.16	ug/l	99
5) Vinyl chloride	4.62	62	460668	48.32	ug/l	99
7) Bromomethane	5.26	94	425574	43.04	ug/l	100
8) Chloroethane	5.42	64	370213	61.26	ug/l	91
9) Dichlorofluoromethane	5.72	67	1477108	53.76	ug/l	100
10) Trichlorofluoromethane	5.79	101	796432	50.94	ug/l	99
11) Acrolein	6.48	56	374002	207.33	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	6.55	151	364440	52.28	ug/l	99
13) 1,1-Dichloroethene	6.61	61	1086519	49.00	ug/l	99
14) Acetone	6.67	43	1183599	221.34	ug/l	93
15) Iodomethane	6.89	142	1201944	44.86	ug/l	98
16) Carbon disulfide	7.01	76	2596461	48.38	ug/l	100
18) Methylene chloride	7.30	49	1190394	44.52	ug/l	100
19) tert-Butyl alcohol	7.34	59	510271	320.14	ug/l	77
20) tert-Butyl methyl ether (M	7.56	73	1888536	48.81	ug/l	95
21) trans-1,2-Dichloroethene	7.64	61	1118172	48.98	ug/l	99
22) Acrylonitrile	7.62	53	1340577	299.06	ug/l	98
23) Isopropyl ether (DIPE)	8.11	45	2978318	49.07	ug/l	99
24) Vinyl acetate	8.16	43	2614056	65.18	ug/l	100
25) 1,1-Dichloroethane	8.20	63	1402740	46.62	ug/l	99
26) tert-Butyl ethyl ether (ET	8.56	59	2481675	49.60	ug/l	99
27) 2-Butanone	8.87	43	2228960	263.47	ug/l	98
28) 2,2-Dichloropropane	8.90	77	994462	49.52	ug/l	98
29) cis-1,2-Dichloroethene	8.92	96	791364	47.84	ug/l	97
31) Bromochloromethane	9.25	49	998625	45.35	ug/l	96
32) Tetrahydrofuran	9.28	42	265415	56.34	ug/l	98

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	9.28	83	1409451	43.07 ug/l	100
35)	1,1,1-Trichloroethane	9.53	97	986980	44.35 ug/l	100
37)	1,1-Dichloropropene	9.71	110	310498	51.01 ug/l	99
38)	Carbon tetrachloride	9.74	119	808931	46.51 ug/l	99
40)	tert-Amyl methyl ether (TA	9.96	87	436515	48.43 ug/l	98
41)	Benzene	9.99	78	2749489	48.52 ug/l	99
42)	1,2-Dichloroethane	10.02	62	1052052	45.21 ug/l	99
43)	Trichloroethene	10.71	130	712151	49.33 ug/l	95
45)	1,2-Dichloropropane	11.00	63	861049	48.35 ug/l	90
46)	1,4-Dioxane	11.12	88	158729	1021.79 ug/l	94
47)	Dibromomethane	11.20	93	560947	44.52 ug/l	97
48)	Bromodichloromethane	11.32	83	1126459	42.61 ug/l	100
49)	2-Chloroethyl vinyl ether	11.52	63	552175	52.91 ug/l	100
50)	cis-1,3-Dichloropropene	11.79	75	1406851	44.09 ug/l	97
51)	4-Methyl-2-pentanone	11.87	43	5075700	236.50 ug/l	97
54)	Toluene	12.19	91	2843263	49.36 ug/l	100
55)	Ethyl methacrylate	12.36	69	1081473	53.51 ug/l	93
56)	trans-1,3-Dichloropropene	12.42	75	1236357	46.86 ug/l	96
57)	1,1,2-Trichloroethane	12.67	97	666304	50.10 ug/l	96
58)	2-Hexanone	12.84	43	3758752	265.58 ug/l	95
59)	Tetrachloroethene	12.85	164	532345	47.73 ug/l	95
60)	1,3-Dichloropropane	12.88	76	1259844	49.95 ug/l	100
61)	Dibromochloromethane	13.21	129	797827	49.79 ug/l	99
62)	1,2-Dibromoethane	13.39	107	729819	50.63 ug/l	100
63)	1-Chlorohexane	13.70	91	1166119	47.94 ug/l	98
64)	Chlorobenzene	13.89	112	1850714	52.87 ug/l	92
65)	Ethylbenzene	13.92	91	3345267	48.30 ug/l	96
66)	1,1,1,2-Tetrachloroethane	13.97	131	705969	49.79 ug/l	97
67)	m-Xylene & p-Xylene	14.04	91	5024529	91.62 ug/l	93
68)	o-Xylene	14.53	91	2669116	46.03 ug/l	92
69)	Styrene	14.55	104	2045938	52.21 ug/l	96
71)	Bromoform	14.90	173	528134	51.78 ug/l	100
72)	Isopropylbenzene	14.92	105	2863809	52.88 ug/l	97
74)	1,1,2,2-Tetrachloroethane	15.32	83	1159668	54.60 ug/l	100
75)	trans-1,4-Dichloro-2-buten	15.37	53	340356	56.65 ug/l	91
76)	n-Propylbenzene	15.41	91	4204170	53.01 ug/l	97
77)	1,2,3-Trichloropropane	15.43	110	261475	61.52 ug/l	94
78)	Bromobenzene	15.46	156	775734	46.86 ug/l	94
79)	1,3,5-Trimethylbenzene	15.58	105	2380409	53.11 ug/l	97
80)	2-Chlorotoluene	15.62	91	2614590	50.50 ug/l	94
81)	4-Chlorotoluene	15.74	91	2388846	50.52 ug/l	94

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration
DataAcq Meth : VO03I25

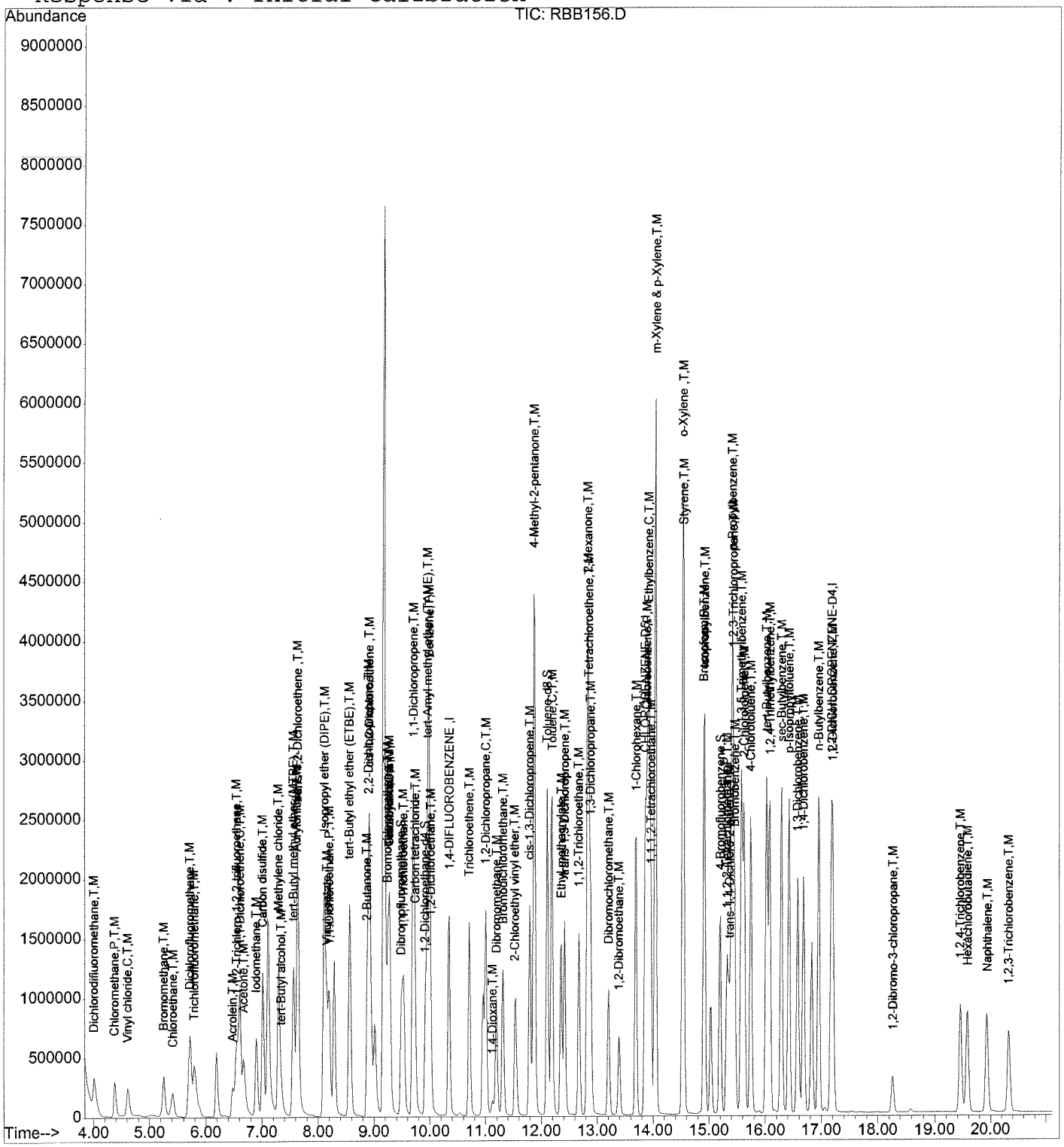
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
82)	tert-Butylbenzene	16.02	134	523507	56.36 ug/l	#	87
83)	1,2,4-Trimethylbenzene	16.08	105	2430038	53.07 ug/l		87
84)	sec-Butylbenzene	16.29	105	3180600	54.18 ug/l		100
85)	p-Isopropyltoluene	16.42	119	2460106	56.84 ug/l		94
86)	1,3-Dichlorobenzene	16.57	146	1362581	51.15 ug/l		98
87)	1,4-Dichlorobenzene	16.68	146	1325389	50.53 ug/l		97
88)	n-Butylbenzene	16.94	91	2651744	54.95 ug/l		99
89)	1,2-Dichlorobenzene	17.20	146	1235063	50.84 ug/l		97
90)	1,2-Dibromo-3-chloropropan	18.27	157	158047	57.79 ug/l		98
91)	1,2,4-Trichlorobenzene	19.45	180	572755	57.70 ug/l		99
92)	Hexachlorobutadiene	19.58	225	349704	55.45 ug/l		99
93)	Naphthalene	19.94	128	1365862	59.87 ug/l		100
94)	1,2,3-Trichlorobenzene	20.33	180	461533	55.83 ug/l		98

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\16B22\RBB156.D Vial: 3
Acq On : 22 Feb 2016 3:30 pm Operator: DNguye
Sample : CVO03I2525 Inst : 03
Misc : 50ppb 8260/250ppb TBA-KET-A-An Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Feb 23 8:49 2016 Quant Results File: VO03I25.RES

Method : D:\HPCHEM\1\METHODS\VO03I25.M (RTE Integrator)
Title : METHOD 8260 5.0g/5mL
Last Update : Tue Jan 19 10:00:45 2016
Response via : Initial Calibration



ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 0 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 9/24/15 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge Book #: A03-057

BATCH VO03I256

Sample Prep ID	Data File Name	Lab Sample ID	* Sample Amount (µL)	DF	Matrix W pH <2	Matrix W Cl₂ <5ppm	Matrix S	Notes
01	RIB316	BFB03I16		1.0	NA	NA	NA	22:24
02	77	VO03I251	.02					1 5 ppb
03	78	2	.04					2 10
04	79	3	.08					4 20
05	80	4	.2					10 50
06	81	5	.4					20 100
07	82	6	1					50 250
08	83	7	2					100 500
09	84	8	4					200 1000
10	85	9	6					300 1500
11	86	10	10					500 2500
12	87	Rinse						
13	88							
14	89	IVO03I257						bad IS spike 04:34
15	90	Rinse CGM 9/25/15						
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								CGM 9/25/15

Instrument No.	03
INITIAL CALIBRATION REFERENCE	
DATE	9/25/15
ICAL ID	VO03I25

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC Freons	SV1-24-78-03	*	250
DCC Gases CS2	90-01		250
	85-01		250
DCC Ketones/Alcohols	86-01		1250
DCC 8260	86-02		250
BFB	76-01	1	50
IS/SURR. 15	88-03	1	250
SS	89-01	*	250
ICV/LCS Gases CS2	90-02	1	250
	90-03	1	250
ICV/LCS Ket/Alc 8260	85-02	5	250
	93-01	5	50
ICV/LCS 3 Acid/1 2B1CH	80-03	5	50
	SV1-12-99-16	1.25	1000
ICV/LCS 2C11TFM CTFM	SV1-25-03-07	.25	1000
	03-03	.25	1000
Data File Folder	15I24		

	LOT #	Syringe Lot #
pH strip		MS2-01-02-23
Chlorine strip		-10-20
Methanol		-10-23
$NaHSO_4$		-24
Reagent Water	RW5-14-001	J08-B4164
Sand	SW1A-005-11-20	

Electronic Data Archival Location	Date
HPCHEM_VOA/TO03	9/28/15

Comments:

☐ Refer to sample weight log

Analyzed By: CGM

Date Disposed: 9/25 Disposed By: CGM

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 0 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 9/27/15 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: A03-057

BATCH V03I252

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01		RIB451	BFB03I20		1.0	NA	NA	NA	11:19
02		↓ 52	IV03I252						11:52
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
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20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									CGM 9/27/15

Instrument No.	03
INITIAL CALIBRATION REFERENCE	
DATE	9/25/15
ICAL ID	V03I25

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC			
BFB	SV1-24-76-01	1	
IS/SURR.	88-01	1	
ICV/LCS	90-02 90-03	1 1	50/
ICV/LCS	85-02 91-02	5 5	/250
ICV/LCS	80-03	5	/1000
ICV/LCS	SV1-12-49-16	1.25	
Data File Folder	15I27		

	LOT #	Syringe Lot #	
pH strip		MSV-01-02-	23
Chlorine strip		–	10-20
Methanol		–	10-23
$NaHSO_4$		–	21
Reagent Water	RWS-14-001		
Sand	SWA-005-11-20		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO03	9/28/15

Comments: SV1-25-03-05 .25 1000
↓ 03-05 .25 1000

☐ Refer to sample weight log

Analyzed By: CGM

Date Disposed: 9/28/15 Disposed By: CGM

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 0 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 2/22/16 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: A03-058

BATCH V003I2525

Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01	RBP154	BFB03B07 ✓						14:21
02	55	Std. Check						
03	56	CV003I2525 ✓						
04	57	VS03B07L ✓	5-OML	1.0				
05	58	C ✓						
06	59	B ✓						
07	60	TVB003SB ✓	0.5ML	10	<5	✓		
08	61	16B094-02 ✓			7	✓		
09	62	16B125-01 ✓			7	✓		18:19
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								CGM 2/23/16

Instrument No.	03
INITIAL CALIBRATION REFERENCE	
DATE	9/25/16
ICAL ID	V003I25

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SV1-26-33-01	1	
DCC	13-02	1	
DCC	31-01	5	
DCC	16-01	5	50/
BFB	29-01	1	/250
IS/SURR.	30-03	1	
ICV/LCS	19-01	1	
ICV/LCS	20-02	1	
ICV/LCS	22-01	5	
ICV/LCS	21-02	5	
Data File Folder	16B22		

	LOT #	Syringe Lot #
pH strip	HC554612	MCV-01-02-23
Chlorine strip	50214	-10-20
Methanol		-10-23
$NaHSO_4$		-21
Reagent Water	RWS-14-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO03	

Comments:

☐ Refer to sample weight log

Analyzed By:

Date Disposed: 2/23/16 Disposed By: CGM

EXTRACTION LOGS

EMAX LABORATORIES, INC.

FileID: TVB003S

VOLATILES TCLP EXTRACTION LOG

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vessel#	TCLPSolnVol	Pressure(psi) Before Agitation	Pressure(psi) After Agitation
16TVB003S01	TVB003SB	0	g	2/18/16 14:51	9	400	10	9
16TVB003S02	B094-02	20	g	2/18/16 14:52	2	400	10	10
16TVB003S03	B125-01	20	g	2/18/16 14:53	1	400	10	10

Calibration of pH Meter — InstrumentID: 96

BufferID	Value	Reading	DateTime
SW1-01-780	4	4.01	2/18/16 12:30
SW1-01-794	7	7	2/18/16 12:29
5W1A-005-12-24	CalVer 5	5.04	2/18/16 12:31
	4		
	7		
	CalVer 5		

TCLP Soln ID	Desc	pH	Expiration Date
SP1B-08-53-03	TCLP (VOA)	4.97	07/28/16

Rotary Agitator #	Criteria	rpm	DateTime
3	30 ± 2 rpm	30	2/18/16 12:32

Thermostat Setting (°F):	73.0	Thermometer ID:	122273417
TCLP Room Temperature	Criteria	Rdg	DateTime
Room Temp (°C) High	23 ± 2 °C	23.8	2/18/16 20:45
Room Temp (°C) Low	23 ± 2 °C	22.1	2/19/16 11:55

Balance ID: 25451062. Calibration check was verified prior to use.

☑ Thermometer Reset on: 2/18/16 18:00

Filter Lot No. 103720-5264

Extract Location: VW05 — Prepared By: DFelic

Received by: DM — Checked By: ML

Date: 2/19 — Date: 2/19/16

☑ DateTimeStarted 2/18/2016 18:00 Comment:

☑ DateTimeEnded 2/19/2016 12:00

SEMI VOLATILE ORGANICS

METHOD SW3520C/8270D
SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/22/16 13:54
Lab Samp ID:	B094-03	Dilution Factor:	5.9
Lab File ID:	RBJ220	Matrix :	WATER
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	59	15	30
2,4,6-TRICHLOROPHENOL	ND	59	15	30
2,4-DINITROTOLUENE	ND	59	15	30
2-METHYLPHENOL	ND	59	15	30
4-METHYLPHENOL (1)	ND	59	15	30
HEXACHLOROBENZENE	ND	59	15	30
HEXACHLOROBUTADIENE	ND	59	15	30
HEXACHLOROETHANE	ND	59	15	30
NITROBENZENE	ND	59	15	30
PENTACHLOROPHENOL	ND	120	15	30
PYRIDINE	ND	240	67	120

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	60.9	70.80	86.0	40-125
2-FLUOROBIPHENYL	14.4	23.60	61.0	50-110
2-FLUOROPHENOL	43.6	70.80	61.6	20-110
NITROBENZENE-D5	16.6	23.60	70.3	40-110
PHENOL-D5	52.5	70.80	74.2	10-115
TERPHENYL-D14	13.8	23.60	58.5	50-135

(1): 4-Methylphenol cannot be separated from 3-Methylphenol

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ220.D
Acq On : 22 Feb 2016 13:54
Sample : 16B094-03 5X
Misc :
Integrator: RTE
Quant Time: Feb 23 08:25:06 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 15
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	495434	40.00	ppm	0.00
21) Naphthalene-d8	4.253	136	1811127	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	1067222	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1975087	40.00	ppm	0.00
87) Chrysene-d12	10.801	240	2295967	40.00	ppm	0.00
97) Perylene-d12	12.242	264	1581478	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.084	112	60153	3.70	ppm	0.01
Spiked Amount 30.000			Recovery	=	12.33%	
6) Phenol-d5	2.675	99	89343	4.45	ppm	0.02
Spiked Amount 30.000			Recovery	=	14.83%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.514	82	28698	1.40	ppm	0.00
Spiked Amount 10.000			Recovery	=	14.00%	
46) 2-Fluorobiphenyl	5.466	172	52057	1.22	ppm	0.00
Spiked Amount 10.000			Recovery	=	12.20%	
75) 2,4,6-Tribromophenol	7.219	330	24503	5.16	ppm	0.00
Spiked Amount 30.000			Recovery	=	17.20%	
90) Terphenyl-d14	9.720	244	57688	1.17	ppm	0.00
Spiked Amount 10.000			Recovery	=	11.70%	

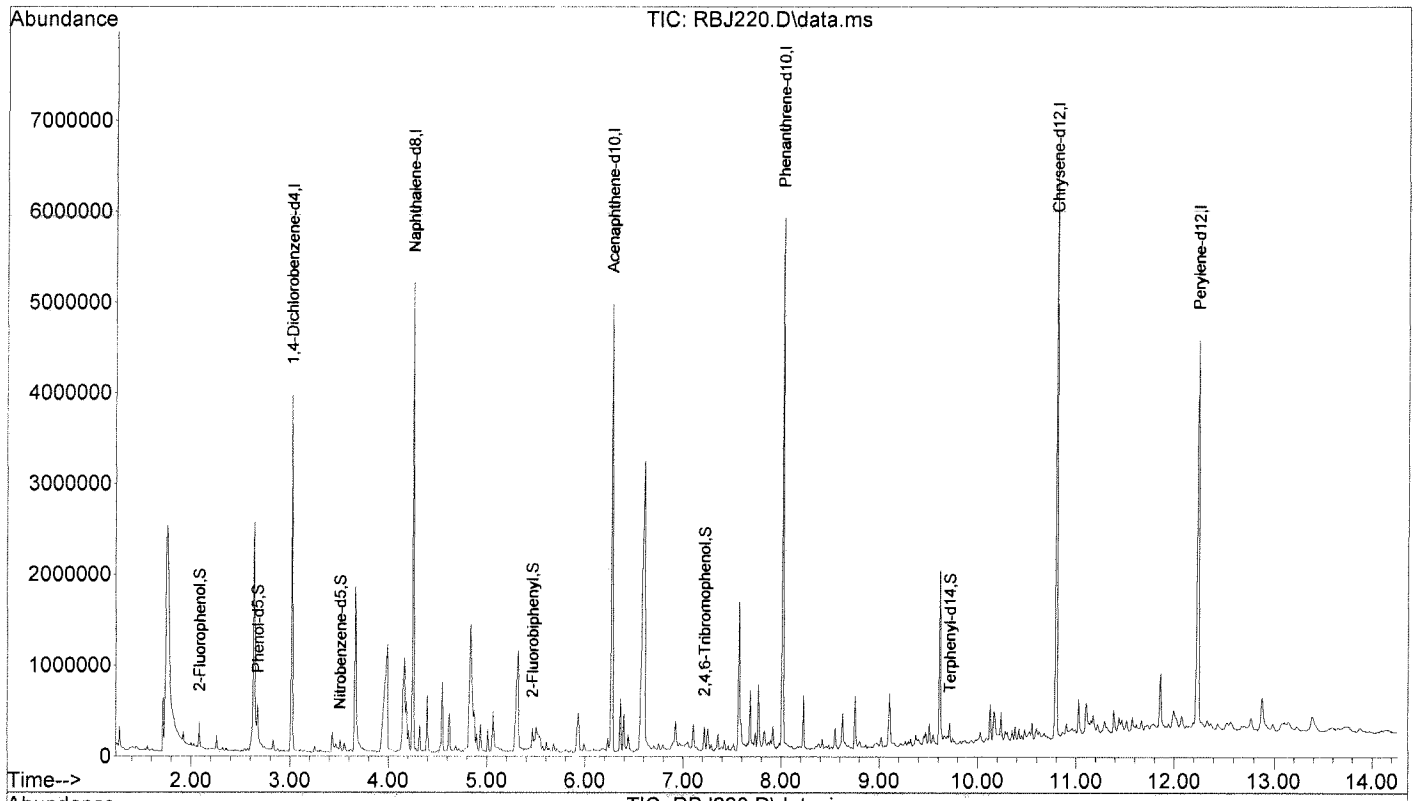
Target Compounds Qvalue

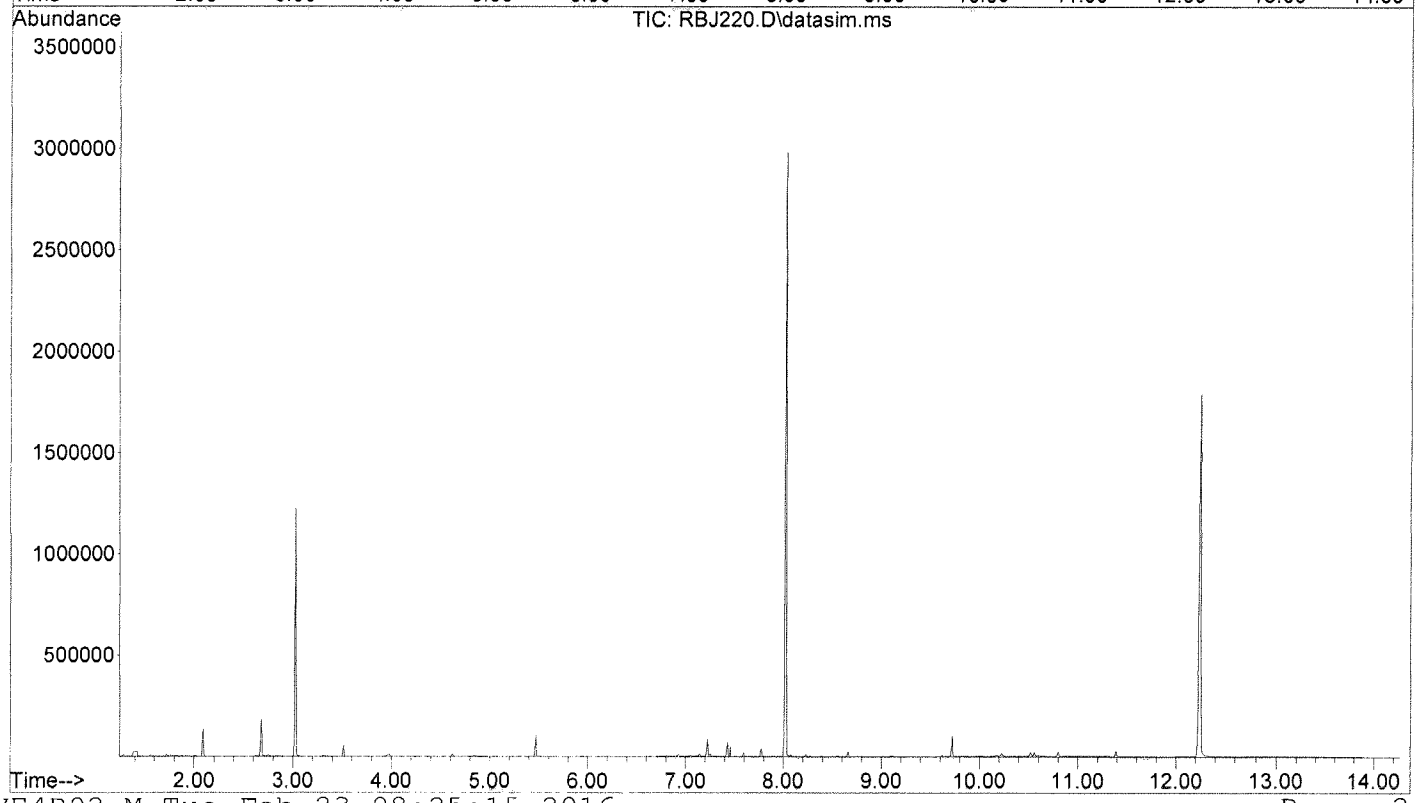
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ220.D
Acq On : 22 Feb 2016 13:54
Sample : 16B094-03 5X
Misc :
Integrator: RTE
Quant Time: Feb 23 08:25:06 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 15
Operator: KVu
Inst : E4
Multiplr: 1.00





QC SUMMARIES

METHOD SW3520C/8270D
SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 10:39
Lab Samp ID:	SVB018WB	Dilution Factor:	1
Lab File ID:	RBJ210	Matrix :	WATER
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4,6-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4-DINITROTOLUENE	ND	10	2.5	5.0
2-METHYLPHENOL	ND	10	2.5	5.0
4-METHYLPHENOL (1)	ND	10	2.5	5.0
HEXACHLOROBENZENE	ND	10	2.5	5.0
HEXACHLOROBUTADIENE	ND	10	2.5	5.0
HEXACHLOROETHANE	ND	10	2.5	5.0
NITROBENZENE	ND	10	2.5	5.0
PENTACHLOROPHENOL	ND	20	2.5	5.0
PYRIDINE	ND	40	11	20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	52.6	60.00	87.7	40-125
2-FLUOROBIPHENYL	16.7	20.00	83.3	50-110
2-FLUOROPHENOL	37.8	60.00	63.1	20-110
NITROBENZENE-D5	14.6	20.00	73.1	40-110
PHENOL-D5	45.3	60.00	75.5	10-115
TERPHENYL-D14	15.6	20.00	78.2	50-135

(1): 4-Methylphenol cannot be separated from 3-Methylphenol

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW3520C/8270D

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID:	MBLK1W		
LAB SAMP ID:	SVB018WB	SVB018WL	SVB018WC
LAB FILE ID:	RBJ210	RBJ211	RBJ212
DATE EXTRACTED:	02/17/1614:30	02/17/1614:30	02/17/1614:30
DATE ANALYZED:	02/22/1610:39	02/22/1610:59	02/22/1611:18
PREP. BATCH:	SVB018W	SVB018W	SVB018W
CALIB. REF:	RBJ007	RBJ007	RBJ007

DATE COLLECTED: NA
DATE RECEIVED: 02/17/16

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 (%)
2,4,5-Trichlorophenol	ND	40.0	27.2	68	40.0	29.4	73	7	50-110	30
2,4,6-Trichlorophenol	ND	40.0	26.2	66	40.0	29.5	74	12	50-115	30
2,4-Dinitrotoluene	ND	40.0	34.3	86	40.0	35.5	89	3	50-120	30
2-Methylphenol	ND	40.0	27.5	69	40.0	31.3	78	13	40-110	30
4-Methylphenol	ND	40.0	28.3	71	40.0	34.7	87	20	30-110	30
Hexachlorobenzene	ND	40.0	32.6	82	40.0	36.2	91	10	50-110	30
Hexachlorobutadiene	ND	40.0	25.4	64	40.0	26.4	66	4	25-105	30
Hexachloroethane	ND	40.0	28.1	70	40.0	29.6	74	5	30-100	30
Nitrobenzene	ND	40.0	27.6	69	40.0	28.5	71	3	45-110	30
Pentachlorophenol	ND	40.0	32.3	81	40.0	34.2	86	6	40-115	30
Pyridine	ND	80.0	44.7	56	80.0	49.1	61	9	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 (%)
2,4,6-Tribromophenol	60.0	48.5	81	60.0	55.1	92	40-125
2-Fluorobiphenyl	20.0	12.8	64	20.0	13.9	70	50-110
2-Fluorophenol	60.0	27.5	46	60.0	35.9	60	20-110
Nitrobenzene-d5	20.0	12.8	64	20.0	13.9	69	40-110
Phenol-d5	60.0	36.2	60	60.0	43.7	73	10-115
Terphenyl-d14	20.0	14.3	71	20.0	15.8	79	50-135

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ210.D
Acq On : 22 Feb 2016 10:39
Sample : SVB018WB
Misc :
Integrator: RTE
Quant Time: Feb 23 08:11:12 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	454567	40.00	ppm	0.00
21) Naphthalene-d8	4.254	136	1707237	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	963841	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1729833	40.00	ppm	0.00
87) Chrysene-d12	10.801	240	1866739	40.00	ppm	0.00
97) Perylene-d12	12.242	264	1698046	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	282466	18.92	ppm	0.01
Spiked Amount 30.000			Recovery = 63.07%			
6) Phenol-d5	2.675	99	417560	22.64	ppm	0.02
Spiked Amount 30.000			Recovery = 75.47%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.514	82	140815	7.31	ppm	0.00
Spiked Amount 10.000			Recovery = 73.10%			
46) 2-Fluorobiphenyl	5.471	172	320631	8.33	ppm	0.00
Spiked Amount 10.000			Recovery = 83.30%			
75) 2,4,6-Tribromophenol	7.224	330	109427	26.32	ppm	0.01
Spiked Amount 30.000			Recovery = 87.73%			
90) Terphenyl-d14	9.720	244	312444	7.82	ppm	0.00
Spiked Amount 10.000			Recovery = 78.20%			

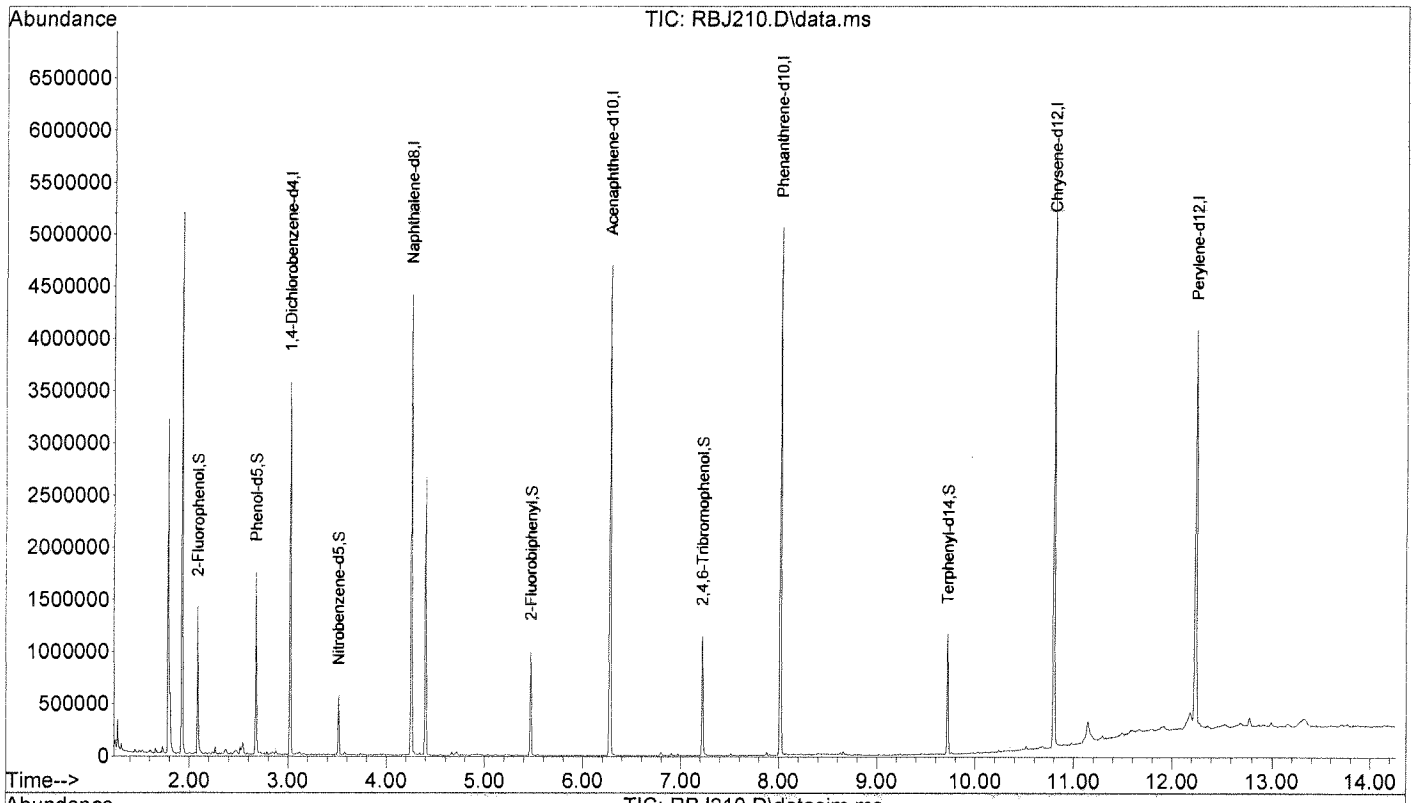
Target Compounds Qvalue

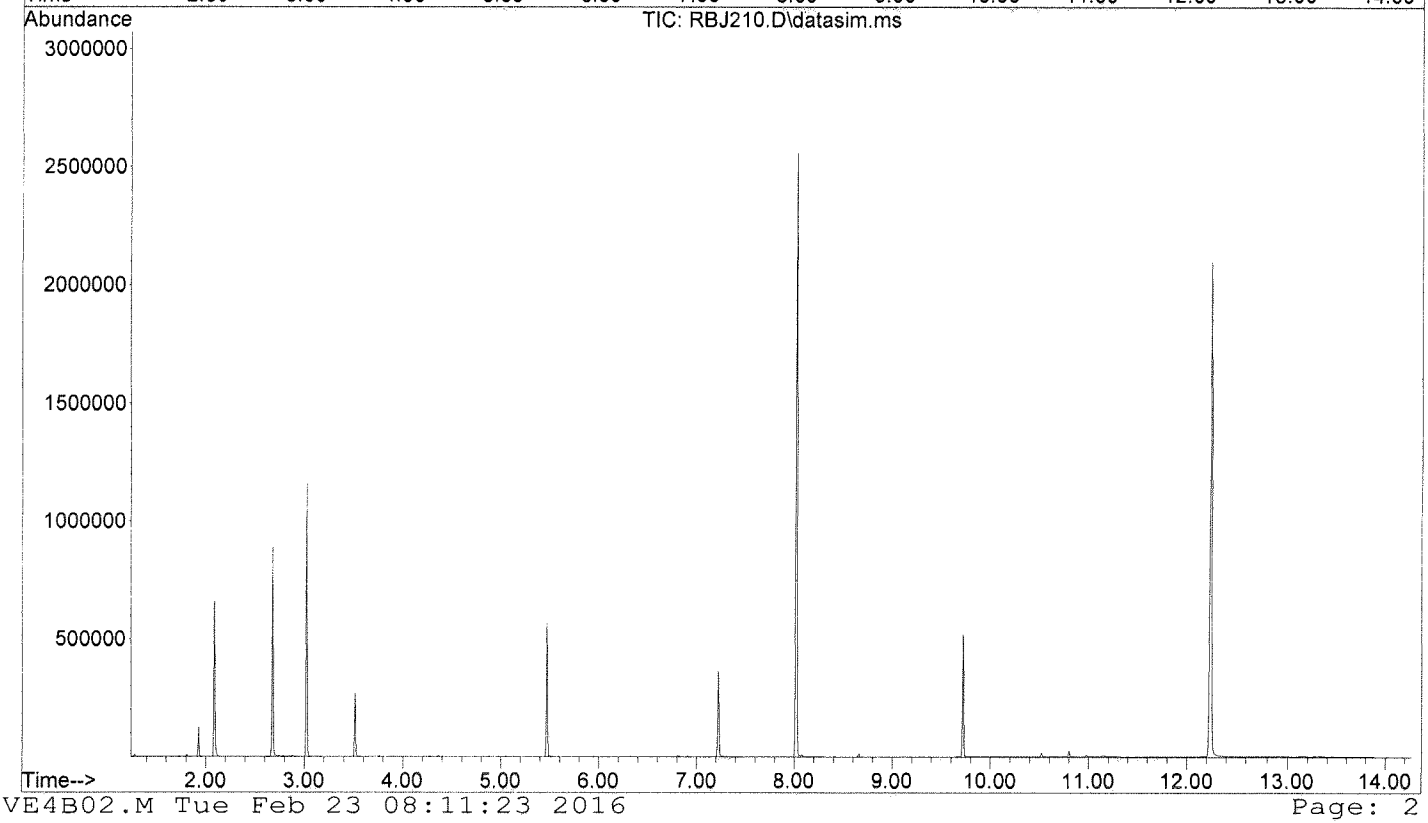
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ210.D
Acq On : 22 Feb 2016 10:39
Sample : SVB018WB
Misc :
Integrator: RTE
Quant Time: Feb 23 08:11:12 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00





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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ211.D
Acq On : 22 Feb 2016 10:59
Sample : SVB018WL
Misc :
Integrator: RTE
Quant Time: Feb 23 08:12:09 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.025	152	533212	40.00	ppm	0.00
21) Naphthalene-d8	4.253	136	1972392	40.00	ppm	0.00
41) Acenaphthene-d10	6.284	164	1136664	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	2057969	40.00	ppm	0.00
87) Chrysene-d12	10.806	240	2339403	40.00	ppm	0.02
97) Perylene-d12	12.247	264	2142971	40.00	ppm	0.03
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	241192	13.77	ppm	0.01
Spiked Amount 30.000			Recovery = 45.90%			
6) Phenol-d5	2.675	99	391797	18.11	ppm	0.02
Spiked Amount 30.000			Recovery = 60.37%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.514	82	142551	6.40	ppm	0.00
Spiked Amount 10.000			Recovery = 64.00%			
46) 2-Fluorobiphenyl	5.471	172	290820	6.40	ppm	0.00
Spiked Amount 10.000			Recovery = 64.00%			
75) 2,4,6-Tribromophenol	7.224	330	119870	24.24	ppm	0.01
Spiked Amount 30.000			Recovery = 80.80%			
90) Terphenyl-d14	9.720	244	358013	7.15	ppm	0.00
Spiked Amount 10.000			Recovery = 71.50%			
Target Compounds						Qvalue
3) N-nitrosodimethylamine	1.481	74	156191	13.78	ppm	86
4) Pyridine	1.510	79	455980	22.37	ppm	94
7) Phenol	2.685	94	283279	12.64	ppm	93
8) Aniline	2.748	93	386494	13.55	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	243556	14.33	ppm	99
10) 2-Chlorophenol	2.847	128	246275	13.02	ppm	88
11) 1,3-Dichlorobenzene	2.977	146	309079	14.01	ppm	100
13) 1,4-Dichlorobenzene	3.039	146	324581	14.49	ppm	98
14) Benzyl alcohol	3.116	108	191163	15.72	ppm	90
15) 1,2-Dichlorobenzene	3.174	146	300981	14.08	ppm	98
16) 2-Methylphenol	3.198	107	210061	13.73	ppm	90
17) bis(2-chloroisopropyl)...	3.231	45	469916	13.28	ppm	99
18) 4-Methylphenol	3.337	107	287296	14.17	ppm	93
19) N-Nitroso-di-n-propyla...	3.351	70	199674	14.07	ppm	94
20) Hexachloroethane	3.480	117	120362	14.07	ppm	96
23) Nitrobenzene	3.533	77	308075	13.79	ppm	94
24) Isophorone	3.763	82	601299	14.04	ppm	97
25) 2-Nitrophenol	3.845	139	132954	14.74	ppm	71
26) 2,4-Dimethylphenol	3.869	107	272798	13.17	ppm	98
27) Benzoic acid	3.969	105	344477	27.10	ppm	98
28) bis(2-Chloroethoxy)met...	3.969	93	323543	14.45	ppm	97
29) 3,5-Dimethylphenol	4.008	107	315487	14.12	ppm	98
30) 2,4-Dichlorophenol	4.094	162	219221	12.49	ppm	99
31) 3,4-Dimethylphenol	4.186	107	347038	14.23	ppm	95
32) 1,2,4-Trichlorobenzene	4.186	180	281824	14.06	ppm	99
33) Naphthalene	4.278	128	833888	15.17	ppm	100
34) 4-Chloroaniline	4.326	127	324409	13.86	ppm	100
35) 2,6-Dichlorophenol	4.336	162	220752	13.29	ppm	99
36) Hexachlorobutadiene	4.398	225	170192	12.71	ppm	100
38) 4-Chloro-3-methylphenol	4.856	107	233414	14.02	ppm	93

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ211.D
Acq On : 22 Feb 2016 10:59
Sample : SVB018WL
Misc :
Integrator: RTE
Quant Time: Feb 23 08:12:09 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

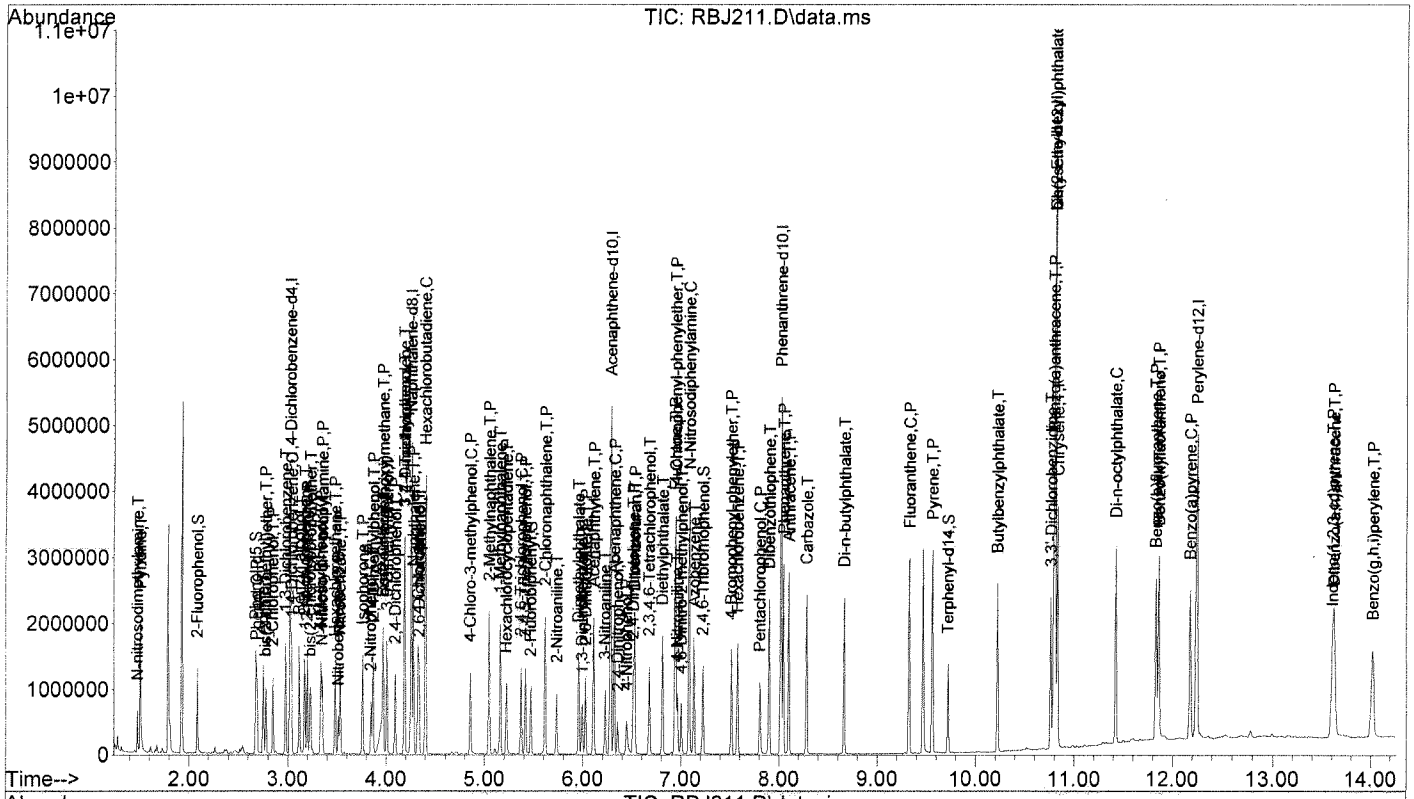
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
39)	2-Methylnaphthalene	5.048	142	542782	14.04	ppm	99
40)	1-Methylnaphthalene	5.158	142	505106	14.92	ppm	99
42)	Hexachlorocyclopentadiene	5.220	237	154633	10.84	ppm	99
44)	2,4,6-Trichlorophenol	5.370	196	169469	13.11	ppm	100
45)	2,4,5-Trichlorophenol	5.413	196	185236	13.62	ppm	89
49)	2-Chloronaphthalene	5.615	162	625238	16.42	ppm	99
50)	2-Nitroaniline	5.735	65	165221	15.39	ppm	96
53)	Dimethylphthalate	5.956	163	629841	15.05	ppm	100
54)	1,3-Dinitrobenzene	5.995	168	84844	15.19	ppm	79
55)	2,6-Dinitrotoluene	6.029	165	138645	16.20	ppm	94
57)	Acenaphthylene	6.111	152	942655	15.63	ppm	100
58)	3-Nitroaniline	6.226	138	148213	16.56	ppm	92
59)	Acenaphthene	6.322	153	564550	14.96	ppm	99
60)	2,4-Dinitrophenol	6.356	184	57290	16.25	ppm	97
61)	4-Nitrophenol	6.447	109	90696	15.48	ppm	87
62)	2,4-Dinitrotoluene	6.514	165	190932	17.16	ppm	94
63)	Dibenzofuran	6.528	168	778671	14.53	ppm	100
65)	2,3,4,6-Tetrachlorophenol	6.677	232	173913	14.24	ppm	100
67)	Diethylphthalate	6.814	149	676450	15.95	ppm	100
68)	Fluorene	6.940	166	609167	14.60	ppm	100
69)	4-Chlorophenyl-phenyle...	6.945	204	306601	14.42	ppm	99
70)	4-Nitroaniline	6.964	138	171831	18.66	ppm	96
72)	4,6-Dinitro-2-methylph...	7.006	198	110869	18.01	ppm	96
73)	N-Nitrosodiphenylamine	7.086	169	521733	14.84	ppm	99
74)	Azobenzene	7.134	77	612754	14.85	ppm	99
76)	4-Bromophenyl-phenylether	7.513	248	185049	14.98	ppm	99
77)	Hexachlorobenzene	7.579	284	205083	16.31	ppm	98
78)	Pentachlorophenol	7.806	266	116106	16.15	ppm	95
79)	Dibenzothiophene	7.900	184	973403	15.33	ppm	94
80)	Phenanthrene	8.046	178	976909	15.13	ppm	100
82)	Anthracene	8.103	178	997105	15.33	ppm	100
83)	Carbazole	8.281	167	905375	16.38	ppm	100
84)	Di-n-butylphthalate	8.664	149	1180252	17.62	ppm	100
86)	Fluoranthene	9.326	202	1172285	16.11	ppm	95
89)	Pyrene	9.562	202	1240154	15.50	ppm	93
91)	Butylbenzylphthalate	10.223	149	539616	19.90	ppm	99
93)	3,3'-Dichlorobenzidine	10.762	252	437142	18.14	ppm	99
94)	Benzo(a)anthracene	10.791	228	1172141	16.22	ppm	87
95)	Chrysene	10.830	228	1113520	16.67	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.801	149	794513	18.97	ppm	100
98)	Di-n-octylphthalate	11.422	149	1393108	19.14	ppm	100
99)	Benzo(b)fluoranthene	11.830	252	1089170	15.85	ppm	93
100)	Benzo(k)fluoranthene	11.859	252	1076735	15.55	ppm	97
102)	Benzo(a)pyrene	12.179	252	1028536	15.76	ppm	96
104)	Indeno(1,2,3-cd)pyrene	13.607	276	1160316	16.06	ppm	94
105)	Dibenzo(a,h)anthracene	13.626	278	999942	16.61	ppm	97
106)	Benzo(g,h,i)perylene	14.024	276	1009767	16.26	ppm	94

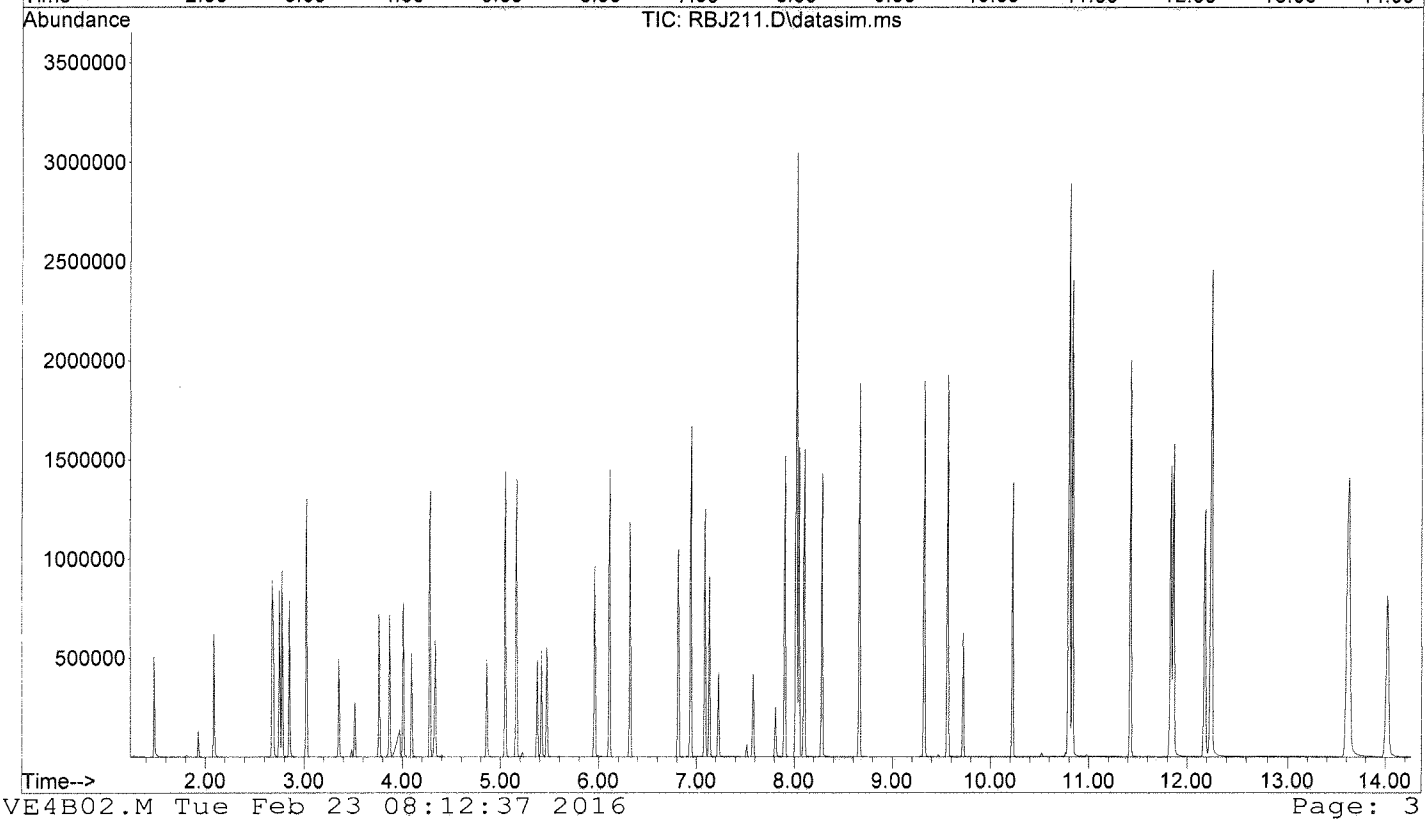
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ211.D
Acq On : 22 Feb 2016 10:59
Sample : SVB018WL
Misc :
Integrator: RTE
Quant Time: Feb 23 08:12:09 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00





426

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ212.D
Acq On : 22 Feb 2016 11:18
Sample : SVB018WC
Misc :
Integrator: RTE
Quant Time: Feb 23 08:13:18 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	481183	40.00	ppm	0.00
21) Naphthalene-d8	4.253	136	1807777	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	1047868	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1820098	40.00	ppm	0.00
87) Chrysene-d12	10.806	240	2055164	40.00	ppm	0.01
97) Perylene-d12	12.242	264	1858009	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	283318	17.93	ppm	0.01
Spiked Amount 30.000			Recovery =	59.77%		
6) Phenol-d5	2.675	99	426297	21.84	ppm	0.02
Spiked Amount 30.000			Recovery =	72.80%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.514	82	141528	6.94	ppm	0.00
Spiked Amount 10.000			Recovery =	69.40%		
46) 2-Fluorobiphenyl	5.471	172	291926	6.97	ppm	0.00
Spiked Amount 10.000			Recovery =	69.70%		
75) 2,4,6-Tribromophenol	7.224	330	120411	27.53	ppm	0.01
Spiked Amount 30.000			Recovery =	91.77%		
90) Terphenyl-d14	9.720	244	348209	7.91	ppm	0.00
Spiked Amount 10.000			Recovery =	79.10%		
Target Compounds						Qvalue
3) N-nitrosodimethylamine	1.481	74	152140	14.88	ppm	85
4) Pyridine	1.510	79	451326	24.53	ppm	94
7) Phenol	2.685	94	296939	14.68	ppm	95
8) Aniline	2.748	93	364601	14.16	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	229365	14.96	ppm	99
10) 2-Chlorophenol	2.847	128	266667	15.62	ppm	80
11) 1,3-Dichlorobenzene	2.977	146	295447	14.84	ppm	99
13) 1,4-Dichlorobenzene	3.034	146	307110	15.20	ppm	99
14) Benzyl alcohol	3.116	108	183925	16.76	ppm	91
15) 1,2-Dichlorobenzene	3.173	146	289502	15.00	ppm	99
16) 2-Methylphenol	3.197	107	215864	15.63	ppm	91
17) bis(2-chloroisopropyl)...	3.231	45	448075	14.03	ppm	99
18) 4-Methylphenol	3.336	107	317317	17.34	ppm	99
19) N-Nitroso-di-n-propyla...	3.351	70	189800	14.82	ppm	96
20) Hexachloroethane	3.480	117	114248	14.80	ppm	96
23) Nitrobenzene	3.533	77	292005	14.26	ppm	94
24) Isophorone	3.763	82	586923	14.96	ppm	97
25) 2-Nitrophenol	3.845	139	137086	16.59	ppm	72
26) 2,4-Dimethylphenol	3.869	107	271378	14.30	ppm	98
27) Benzoic acid	3.969	105	347651	29.64	ppm	97
28) bis(2-Chloroethoxy)met...	3.969	93	309250	15.07	ppm	97
29) 3,5-Dimethylphenol	4.008	107	335849	16.40	ppm	97
30) 2,4-Dichlorophenol	4.094	162	221085	13.74	ppm	99
31) 3,4-Dimethylphenol	4.186	107	349063	15.62	ppm	95
32) 1,2,4-Trichlorobenzene	4.186	180	264233	14.38	ppm	100
33) Naphthalene	4.278	128	792123	15.73	ppm	100
34) 4-Chloroaniline	4.321	127	315642	14.71	ppm	100
35) 2,6-Dichlorophenol	4.335	162	227720	14.96	ppm	99
36) Hexachlorobutadiene	4.398	225	161893	13.20	ppm	100
38) 4-Chloro-3-methylphenol	4.856	107	233021	15.27	ppm	96

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ212.D
Acq On : 22 Feb 2016 11:18
Sample : SVB018WC
Misc :
Integrator: RTE
Quant Time: Feb 23 08:13:18 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

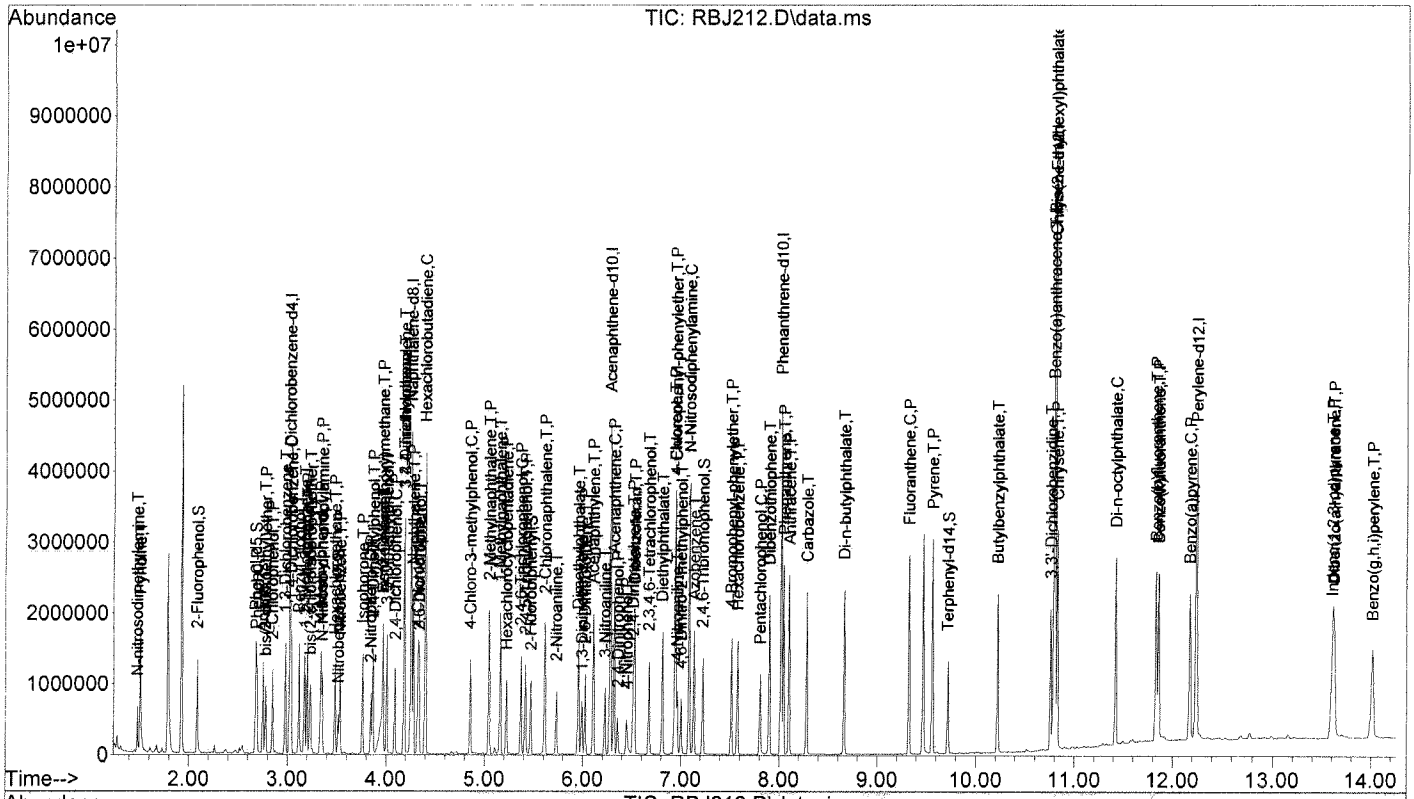
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
39)	2-Methylnaphthalene	5.048	142	522025	14.73	ppm	99
40)	1-Methylnaphthalene	5.158	142	486972	15.69	ppm	100
42)	Hexachlorocyclopentadiene	5.220	237	152094	11.56	ppm	99
44)	2,4,6-Trichlorophenol	5.369	196	175741	14.75	ppm	100
45)	2,4,5-Trichlorophenol	5.413	196	184019	14.68	ppm	98
49)	2-Chloronaphthalene	5.615	162	606994	17.29	ppm	99
50)	2-Nitroaniline	5.730	65	158525	16.01	ppm	95
53)	Dimethylphthalate	5.956	163	618313	16.03	ppm	99
54)	1,3-Dinitrobenzene	5.990	168	84368	16.39	ppm	76
55)	2,6-Dinitrotoluene	6.024	165	135930	17.23	ppm	95
57)	Acenaphthylene	6.106	152	930600	16.74	ppm	99
58)	3-Nitroaniline	6.226	138	138884	16.83	ppm	93
59)	Acenaphthene	6.317	153	552305	15.88	ppm	99
60)	2,4-Dinitrophenol	6.355	184	58214	17.63	ppm	100
61)	4-Nitrophenol	6.447	109	83855	15.52	ppm	86
62)	2,4-Dinitrotoluene	6.514	165	182258	17.76	ppm	95
63)	Dibenzofuran	6.528	168	764387	15.47	ppm	100
65)	2,3,4,6-Tetrachlorophenol	6.677	232	170763	15.17	ppm	99
67)	Diethylphthalate	6.814	149	650681	16.64	ppm	100
68)	Fluorene	6.940	166	604314	15.71	ppm	100
69)	4-Chlorophenyl-phenyle...	6.945	204	301731	15.39	ppm	99
70)	4-Nitroaniline	6.964	138	159247	18.76	ppm	96
72)	4,6-Dinitro-2-methylph...	7.001	198	106861	19.43	ppm	97
73)	N-Nitrosodiphenylamine	7.086	169	513355	16.51	ppm	99
74)	Azobenzene	7.134	77	608311	16.67	ppm	99
76)	4-Bromophenyl-phenylether	7.513	248	180804	16.54	ppm	98
77)	Hexachlorobenzene	7.579	284	201373	18.11	ppm	98
78)	Pentachlorophenol	7.806	266	108747	17.10	ppm	98
79)	Dibenzothiophene	7.900	184	937012	16.69	ppm	94
80)	Phenanthrene	8.046	178	931462	16.31	ppm	100
82)	Anthracene	8.103	178	957163	16.64	ppm	100
83)	Carbazole	8.281	167	854302	17.48	ppm	100
84)	Di-n-butylphthalate	8.663	149	1116736	18.85	ppm	100
86)	Fluoranthene	9.320	202	1107833	17.22	ppm	95
89)	Pyrene	9.561	202	1256212	17.88	ppm	96
91)	Butylbenzylphthalate	10.222	149	502909	21.11	ppm	98
93)	3,3'-Dichlorobenzidine	10.762	252	397269	18.77	ppm	100
94)	Benzo(a)anthracene	10.791	228	1075782	16.94	ppm	87
95)	Chrysene	10.825	228	1027852	17.51	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.801	149	737530	20.05	ppm	100
98)	Di-n-octylphthalate	11.422	149	1274248	20.19	ppm	99
99)	Benzo(b)fluoranthene	11.830	252	981930	16.48	ppm	93
100)	Benzo(k)fluoranthene	11.854	252	1023823	17.05	ppm	98
102)	Benzo(a)pyrene	12.174	252	941404	16.64	ppm	95
104)	Indeno(1,2,3-cd)pyrene	13.607	276	1059745	16.92	ppm	92
105)	Dibenzo(a,h)anthracene	13.621	278	927832	17.78	ppm	99
106)	Benzo(g,h,i)perylene	14.019	276	940442	17.46	ppm	95

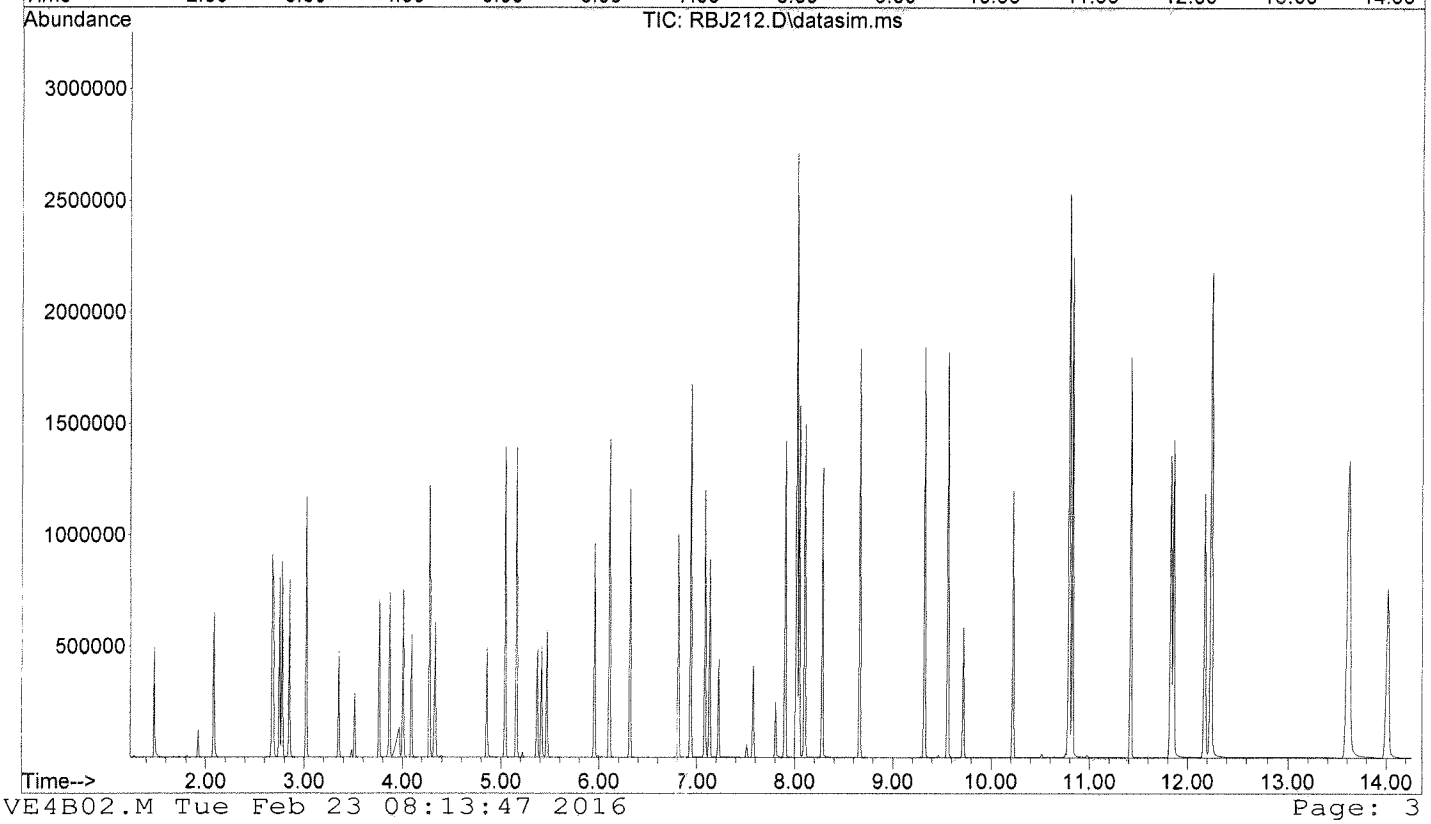
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ212.D
Acq On : 22 Feb 2016 11:18
Sample : SVB018WC
Misc :
Integrator: RTE
Quant Time: Feb 23 08:13:18 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00





INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ002
Instrument ID: TOE4

Project: CANNON AFB PBR
SDG No.: 16B094
DFTPP Injection Date: 02/02/16
DFTPP Injection Time: 08:58

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	47.04
68	Less than 2% of mass 69	0.76(1.8)1
69	% of mass 198	41.36
70	Less than 2% of mass 69	0.32(0.8)1
127	10.0 - 80.0% of mass 198	47.03
197	Less than 2.0% of mass 198	0.14
198	Base Peak, 100	100.00
199	5.0 - 9.0% of mass 198	6.68
275	10.0 - 60.0% of mass 198	22.97
365	Greater than 1.00% of mass 198	2.42
441	Present, but less than 24% of mass 442	8.85(15.5)2
442	Greater than 50% of mass 198	57.16
443	15.0 - 24.0% of mass 442	11.27(19.7)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD100	SVE4B021	RBJ003	02/02/16	09:09
2	SSTD080	SVE4B022	RBJ004	02/02/16	09:28
3	SSTD050	SVE4B023	RBJ005	02/02/16	09:47
4	SSTD040	SVE4B024	RBJ006	02/02/16	10:06
5	SSTD025	SVE4B025	RBJ007	02/02/16	10:25
6	SSTD020	SVE4B026	RBJ008	02/02/16	10:44
7	SSTD010	SVE4B027	RBJ009	02/02/16	11:04
8	SSTD004	SVE4B028	RBJ010	02/02/16	11:23
9	SSTD025	ISVE4B022	RBJ033	02/02/16	18:46

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:ICAL
SDG No.:ICAL
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	424119	3.02	1535126	4.25	929909	6.27
	UPPER LIMIT	848238	3.52	3070252	4.75	1859818	6.77
	LOWER LIMIT	212060	2.52	767563	3.75	464955	5.77
	SAMPLE ID						
1	SVE4B021	461215	3.02	1653283	4.24	975500	6.27
2	SVE4B022	457524	3.02	1635246	4.24	965543	6.27
3	SVE4B023	438355	3.02	1557201	4.25	920177	6.27
4	SVE4B024	455852	3.02	1618791	4.25	966999	6.27
5	SVE4B026	428154	3.02	1558094	4.25	937266	6.27
6	SVE4B027	432450	3.02	1552213	4.25	916662	6.27
7	SVE4B028	432154	3.02	1547249	4.24	918028	6.27
8	ISVE4B022	489141	3.02	1779787	4.25	1073834	6.27

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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-1 OLM02.0

pu 02-08-16

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:ICAL
SDG No.:ICAL
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1694673	8.01	1850796	10.79	1601653	12.22
	UPPER LIMIT	3389346	8.51	3701592	11.29	3203306	12.72
	LOWER LIMIT	847337	7.51	925398	10.29	800827	11.72
	SAMPLE ID						
1	SVE4B021	1717161	8.00	1841322	10.79	1572144	12.21
2	SVE4B022	1710410	8.00	1882885	10.79	1627440	12.21
3	SVE4B023	1669203	8.01	1936700	10.79	1696912	12.22
4	SVE4B024	1728695	8.01	1903162	10.79	1635198	12.22
5	SVE4B026	1665411	8.01	1881471	10.79	1593531	12.21
6	SVE4B027	1649622	8.01	1883963	10.79	1610421	12.21
7	SVE4B028	1630524	8.01	1830134	10.79	1579900	12.21
8	ISVE4B022	1895693	8.01	2074726	10.79	1806442	12.21

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

02-08-16

427

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E4 — Column Spec :ZB-SEMI ID :0.18MM
Beginning DateTime :02/02/16 09:09 — Ending DateTime :02/02/16 11:23
IC File :RBJ007 — HPChem Method :SVE4802

WATER Init. Vol. (ml) : 1000 — Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 — Final Vol. (ml) : 1

IDX	Parameters	ON COL MG/L	WATER UG/L	SOIL MG/KG	R FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	4	4	.1333	RBJ010
3	N-nitrosodimethylamine	4	4	.1333	RBJ010
4	Pyridine	4	4	.1333	RBJ010
5	2-Fluorophenol	4	4	.1333	RBJ010
6	Phenol-d5	4	4	.1333	RBJ010
7	Phenol	4	4	.1333	RBJ010
8	Aniline	4	4	.1333	RBJ010
9	bis(2-chloroethyl)ether	4	4	.1333	RBJ010
10	2-Chlorophenol	4	4	.1333	RBJ010
11	1,3-Dichlorobenzene	4	4	.1333	RBJ010
12	1,2-Dichlorobenzene-d4	NA	NA	NA	NA
13	1,4-Dichlorobenzene	4	4	.1333	RBJ010
14	Benzyl alcohol	4	4	.1333	RBJ010
15	1,2-Dichlorobenzene	4	4	.1333	RBJ010
16	2-Methylphenol	4	4	.1333	RBJ010
17	bis(2-chloroisopropyl)ether	4	4	.1333	RBJ010
18	4-Methylphenol	4	4	.1333	RBJ010
19	N-Nitroso-di-n-propylamine	4	4	.1333	RBJ010
20	Hexachloroethane	4	4	.1333	RBJ010
21	Naphthalene-d8	IntSTD	IntSTD	IntSTD	IntSTD
22	Nitrobenzene-d5	4	4	.1333	RBJ010
23	Nitrobenzene	4	4	.1333	RBJ010
24	Isophorone	4	4	.1333	RBJ010
25	2-Nitrophenol	4	4	.1333	RBJ010
26	2,4-Dimethylphenol	4	4	.1333	RBJ010
27	Benzoic acid	4	4	.1333	RBJ010
28	bis(2-Chloroethoxy)methane	4	4	.1333	RBJ010
29	3,5-Dimethylphenol	4	4	.1333	RBJ010
30	2,4-Dichlorophenol	4	4	.1333	RBJ010
31	3,4-Dimethylphenol	4	4	.1333	RBJ010
32	1,2,4-Trichlorobenzene	4	4	.1333	RBJ010
33	Naphthalene	4	4	.1333	RBJ010
34	4-Chloroaniline	4	4	.1333	RBJ010
35	2,6-Dichlorophenol	4	4	.1333	RBJ010
36	Hexachlorobutadiene	4	4	.1333	RBJ010
37	Hydroquinone	NA	NA	NA	NA
38	4-Chloro-3-methylphenol	4	4	.1333	RBJ010
39	2-Methylnaphthalene	4	4	.1333	RBJ010
40	1-Methylnaphthalene	4	4	.1333	RBJ010
41	Acenaphthene-d10	IntSTD	IntSTD	IntSTD	IntSTD
42	Hexachlorocyclopentadiene	4	4	.1333	RBJ010
43	2,3,5-Trichlorophenol	4	4	.1333	RBJ010
44	2,4,6-Trichlorophenol	4	4	.1333	RBJ010
45	2,4,5-Trichlorophenol	4	4	.1333	RBJ010
46	2-Fluorobiphenyl	4	4	.1333	RBJ010
47	2,3,4-Trichlorophenol	4	4	.1333	RBJ010
48	Biphenyl	4	4	.1333	RBJ010
49	2-Chloronaphthalene	4	4	.1333	RBJ010
50	2-Nitroaniline	4	4	.1333	RBJ010
51	2,6-Dimethylnaphthalene	4	4	.1333	RBJ010
52	1,4-Dinitrobenzene	4	4	.1333	RBJ010
53	Dimethylphthalate	4	4	.1333	RBJ010
54	1,3-Dinitrobenzene	4	4	.1333	RBJ010
55	2,6-Dinitrotoluene	4	4	.1333	RBJ010
56	1,2-Dinitrobenzene	4	4	.1333	RBJ010
57	Acenaphthylene	4	4	.1333	RBJ010
58	3-Nitroaniline	4	4	.1333	RBJ010
59	Acenaphthene	4	4	.1333	RBJ010
60	2,4-Dinitrophenol	4	4	.1333	RBJ010
61	4-Nitrophenol	4	4	.1333	RBJ010
62	2,4-Dinitrotoluene	4	4	.1333	RBJ010
63	Dibenzofuran	4	4	.1333	RBJ010
64	2,3,5,6-Tetrachlorophenol	4	4	.1333	RBJ010
65	2,3,4,6-Tetrachlorophenol	4	4	.1333	RBJ010
66	2,3,5-Trimethylnaphthalene	4	4	.1333	RBJ010
67	Diethylphthalate	4	4	.1333	RBJ010
68	Fluorene	4	4	.1333	RBJ010
69	4-Chlorophenyl-phenylether	4	4	.1333	RBJ010
70	4-Nitroaniline	4	4	.1333	RBJ010
71	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
72	4,6-Dinitro-2-methylphenol	4	4	.1333	RBJ010
73	N-Nitrosodiphenylamine	4	4	.1333	RBJ010
74	Azobenzene	4	4	.1333	RBJ010
75	2,4,6-Tribromophenol	4	4	.1333	RBJ010
76	4-Bromophenyl-phenylether	4	4	.1333	RBJ010
77	Hexachlorobenzene	4	4	.1333	RBJ010
78	Pentachlorophenol	4	4	.1333	RBJ010
79	Dibenzothiophene	4	4	.1333	RBJ010
80	Phenanthrene	4	4	.1333	RBJ010
81	Dinoseb	NA	NA	NA	NA
82	Anthracene	4	4	.1333	RBJ010
83	Carbazole	4	4	.1333	RBJ010
84	Di-n-butylphthalate	4	4	.1333	RBJ010
85	1-Methylphenanthrene	4	4	.1333	RBJ010
86	Fluoranthene	4	4	.1333	RBJ010
87	Chrysene-d12	IntSTD	IntSTD	IntSTD	IntSTD
88	Benzidine	NA	NA	NA	NA
89	Pyrene	4	4	.1333	RBJ010
90	Terphenyl-d14	4	4	.1333	RBJ010
91	Butylbenzylphthalate	4	4	.1333	RBJ010
92	bis(2-ethylhexyl)adipate	4	4	.1333	RBJ010
93	3,3'-Dichlorobenzidine	4	4	.1333	RBJ010
94	Benzo(a)anthracene	4	4	.1333	RBJ010
95	Chrysene	4	4	.1333	RBJ010
96	bis(2-Ethylhexyl)phthalate	4	4	.1333	RBJ010
97	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
98	Di-n-octylphthalate	4	4	.1333	RBJ010
99	Benzo(b)fluoranthene	4	4	.1333	RBJ010
100	Benzo(k)fluoranthene	4	4	.1333	RBJ010
101	Benzo(e)pyrene	4	4	.1333	RBJ010
102	Benzo(a)pyrene	4	4	.1333	RBJ010
103	Perylene	4	4	.1333	RBJ010
104	Indeno(1,2,3-cd)pyrene	4	4	.1333	RBJ010
105	Dibenzo(a,h)anthracene	4	4	.1333	RBJ010
106	Benzo(g,h,i)perylene	4	4	.1333	RBJ010

PW 02-08-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E4 Column Spec :ZB-SEMI ID :0.18MM
Beginning DateTime :02/02/16 09:09 Ending DateTime :02/02/16 11:23
IC File :RBJ007 HPChem Method :SVE4B02

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	4	8	.2667	RBJ010
3	N-nitrosodimethylamine	4	8	.2667	RBJ010
4	Pyridine	4	8	.2667	RBJ010
5	2-Fluorophenol	4	8	.2667	RBJ010
6	Phenol-d5	4	8	.2667	RBJ010
7	Phenol	4	8	.2667	RBJ010
8	Aniline	4	8	.2667	RBJ010
9	bis(2-chloroethyl)ether	4	8	.2667	RBJ010
10	2-Chlorophenol	4	8	.2667	RBJ010
11	1,3-Dichlorobenzene	4	8	.2667	RBJ010
12	1,2-Dichlorobenzene-d4	NA	NA	NA	NA
13	1,4-Dichlorobenzene	4	8	.2667	RBJ010
14	Benzyl alcohol	4	8	.2667	RBJ010
15	1,2-Dichlorobenzene	4	8	.2667	RBJ010
16	2-Methylphenol	4	8	.2667	RBJ010
17	bis(2-chloroisopropyl)ether	4	8	.2667	RBJ010
18	4-Methylphenol	4	8	.2667	RBJ010
19	N-Nitroso-di-n-propylamine	4	8	.2667	RBJ010
20	Hexachloroethane	4	8	.2667	RBJ010
21	Naphthalene-d8	IntSTD	IntSTD	IntSTD	IntSTD
22	Nitrobenzene-d5	4	8	.2667	RBJ010
23	Nitrobenzene	4	8	.2667	RBJ010
24	Isophorone	4	8	.2667	RBJ010
25	2-Nitrophenol	4	8	.2667	RBJ010
26	2,4-Dimethylphenol	4	8	.2667	RBJ010
27	Benzoic acid	4	8	.2667	RBJ010
28	bis(2-Chloroethoxy)methane	4	8	.2667	RBJ010
29	3,5-Dimethylphenol	4	8	.2667	RBJ010
30	2,4-Dichlorophenol	4	8	.2667	RBJ010
31	3,4-Dimethylphenol	4	8	.2667	RBJ010
32	1,2,4-Trichlorobenzene	4	8	.2667	RBJ010
33	Naphthalene	4	8	.2667	RBJ010
34	4-Chloroaniline	4	8	.2667	RBJ010
35	2,6-Dichlorophenol	4	8	.2667	RBJ010
36	Hexachlorobutadiene	4	8	.2667	RBJ010
37	Hydroquinone	NA	NA	NA	NA
38	4-Chloro-3-methylphenol	4	8	.2667	RBJ010
39	2-Methylnaphthalene	4	8	.2667	RBJ010
40	1-Methylnaphthalene	4	8	.2667	RBJ010
41	Acenaphthene-d10	IntSTD	IntSTD	IntSTD	IntSTD
42	Hexachlorocyclopentadiene	4	8	.2667	RBJ010
43	2,3,5-Trichlorophenol	4	8	.2667	RBJ010
44	2,4,6-Trichlorophenol	4	8	.2667	RBJ010
45	2,4,5-Trichlorophenol	4	8	.2667	RBJ010
46	2-Fluorobiphenyl	4	8	.2667	RBJ010
47	2,3,4-Trichlorophenol	4	8	.2667	RBJ010
48	Biphenyl	4	8	.2667	RBJ010
49	2-Chloronaphthalene	4	8	.2667	RBJ010
50	2-Nitroaniline	4	8	.2667	RBJ010
51	2,6-Dimethylnaphthalene	4	8	.2667	RBJ010
52	1,4-Dinitrobenzene	4	8	.2667	RBJ010
53	Dimethylphthalate	4	8	.2667	RBJ010
54	1,3-Dinitrobenzene	4	8	.2667	RBJ010
55	2,6-Dinitrotoluene	4	8	.2667	RBJ010
56	1,2-Dinitrobenzene	4	8	.2667	RBJ010
57	Acenaphthylene	4	8	.2667	RBJ010
58	3-Nitroaniline	4	8	.2667	RBJ010
59	Acenaphthene	4	8	.2667	RBJ010
60	2,4-Dinitrophenol	4	8	.2667	RBJ010
61	4-Nitrophenol	4	8	.2667	RBJ010
62	2,4-Dinitrotoluene	4	8	.2667	RBJ010
63	Dibenzofuran	4	8	.2667	RBJ010
64	2,3,5,6-Tetrachlorophenol	4	8	.2667	RBJ010
65	2,3,4,6-Tetrachlorophenol	4	8	.2667	RBJ010
66	2,3,5-Trimethylnaphthalene	4	8	.2667	RBJ010
67	Diethylphthalate	4	8	.2667	RBJ010
68	Fluorene	4	8	.2667	RBJ010
69	4-Chlorophenyl-phenylether	4	8	.2667	RBJ010
70	4-Nitroaniline	4	8	.2667	RBJ010
71	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
72	4,6-Dinitro-2-methylphenol	4	8	.2667	RBJ010
73	N-Nitrosodiphenylamine	4	8	.2667	RBJ010
74	Azobenzene	4	8	.2667	RBJ010
75	2,4,6-Tribromophenol	4	8	.2667	RBJ010
76	4-Bromophenyl-phenylether	4	8	.2667	RBJ010
77	Hexachlorobenzene	4	8	.2667	RBJ010
78	Pentachlorophenol	4	8	.2667	RBJ010
79	Dibenzothiophene	4	8	.2667	RBJ010
80	Phenanthrene	4	8	.2667	RBJ010
81	Dinoseb	NA	NA	NA	NA
82	Anthracene	4	8	.2667	RBJ010
83	Carbazole	4	8	.2667	RBJ010
84	Di-n-butylphthalate	4	8	.2667	RBJ010
85	1-Methylphenanthrene	4	8	.2667	RBJ010
86	Fluoranthene	4	8	.2667	RBJ010
87	Chrysene-d12	IntSTD	IntSTD	IntSTD	IntSTD
88	Benzidine	NA	NA	NA	NA
89	Pyrene	4	8	.2667	RBJ010
90	Terphenyl-d14	4	8	.2667	RBJ010
91	Butylbenzylphthalate	4	8	.2667	RBJ010
92	bis(2-ethylhexyl)adipate	4	8	.2667	RBJ010
93	3,3'-Dichlorobenzidine	4	8	.2667	RBJ010
94	Benzo(a)anthracene	4	8	.2667	RBJ010
95	Chrysene	4	8	.2667	RBJ010
96	bis(2-Ethylhexyl)phthalate	4	8	.2667	RBJ010
97	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
98	Di-n-octylphthalate	4	8	.2667	RBJ010
99	Benzo(b)fluoranthene	4	8	.2667	RBJ010
100	Benzo(k)fluoranthene	4	8	.2667	RBJ010
101	Benzo(e)pyrene	4	8	.2667	RBJ010
102	Benzo(a)pyrene	4	8	.2667	RBJ010
103	Perylene	4	8	.2667	RBJ010
104	Indeno(1,2,3-cd)pyrene	4	8	.2667	RBJ010
105	Dibenzo(a,h)anthracene	4	8	.2667	RBJ010
106	Benzo(g,h,i)perylene	4	8	.2667	RBJ010

pu 02-08-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E4
Beginning DateTime :02/02/16 09:09
Spike Units :PPM
IC File :RBJ007

Column Spec :ZB-SEMI ID :0.18MM
Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02

IDX	Parameters	4 11:23 RBJ010	10 11:04 RBJ009	20 10:44 RBJ008	25 10:25 RBJ007	40 10:06 RBJ006	50 09:47 RBJ005	80 09:28 RBJ004	100 09:09 RBJ003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	0	3.0151
2	1,4-Dioxane	0.674	0.610	0.588	0.582	0.567	0.573	------	------	0.599	6.63	1.3665
3	N-nitrosodimethylamine	0.841	0.841	0.860	0.872	0.838	0.848	------	------	0.850	1.57	1.4766
4	Pyridine	1.586	1.584	1.608	1.627	1.588	1.574	1.340	1.328	1.529	7.97	1.5023
5	2-Fluorophenol	1.302	1.298	1.322	1.339	1.311	1.311	------	------	1.314	1.13	2.0717
6	Phenol-d5	1.606	1.589	1.631	1.678	1.615	1.617	------	------	1.623	1.86	2.6593
7	Phenol	1.694	1.658	1.714	1.717	1.655	1.651	------	------	1.682	1.81	2.6706
8	Aniline	2.170	2.144	2.173	2.187	2.095	2.069	------	------	2.140	2.23	2.7436
9	bis(2-chloroethyl)ether	1.285	1.266	1.283	1.319	1.259	1.237	------	------	1.275	2.19	2.7723
10	2-Chlorophenol	1.363	1.366	1.404	1.413	1.481	1.487	------	------	1.419	3.81	2.8383
11	1,3-Dichlorobenzene	1.661	1.654	1.661	1.685	1.647	1.618	------	------	1.654	1.34	2.9719
12	1,2-Dichlorobenzene-d4	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
13	1,4-Dichlorobenzene	1.696	1.667	1.707	1.704	1.664	1.642	------	------	1.680	1.55	3.0303
14	Benzyl alcohol	0.883	0.910	0.943	0.933	0.905	0.898	------	------	0.912	2.45	3.1095
15	1,2-Dichlorobenzene	1.627	1.620	1.616	1.641	1.567	1.554	------	------	1.604	2.20	3.1647
16	2-Methylphenol	1.171	1.138	1.164	1.166	1.130	1.118	------	------	1.148	1.93	3.1839
17	bis(2-chloroisopropyl)ether	2.773	2.650	2.695	2.690	2.588	2.531	------	------	2.655	3.22	3.2287
18	4-Methylphenol	1.459	1.474	1.533	1.547	1.626	1.487	------	------	1.521	4.06	3.3213
19	N-Nitroso-di-n-propylamine	0.989	1.017	1.056	1.066	1.152	1.106	------	------	1.064	5.54	3.3508
20	Hexachloroethane	0.631	0.626	0.654	0.660	0.641	0.638	------	------	0.642	2.07	3.4769
21	Naphthalene-d8	1	1	1	1	1	1	1	1	1	0	4.2468
22	Nitrobenzene-d5	0.443	0.446	0.449	0.462	0.457	0.451	------	------	0.451	1.58	3.5081
23	Nitrobenzene	0.454	0.448	0.457	0.462	0.454	0.445	------	------	0.453	1.42	3.5281
24	Isophorone	0.876	0.861	0.865	0.885	0.884	0.840	------	------	0.868	1.97	3.7583
25	2-Nitrophenol	0.158	0.178	0.188	0.196	0.194	0.184	------	------	0.183	7.64	3.8390
26	2,4-Dimethylphenol	0.418	0.419	0.422	0.430	0.421	0.410	------	------	0.420	1.54	3.8542
27	Benzoic acid	0.177	0.193	0.243	0.255	0.267	0.264	0.278	0.270	0.243	15.58	3.9464
28	bis(2-Chloroethoxy)methane	0.467	0.453	0.457	0.462	0.448	0.438	------	------	0.454	2.26	3.9652
29	3,5-Dimethylphenol	0.416	0.410	0.472	0.481	0.481	0.458	------	------	0.453	7.12	3.9931
30	2,4-Dichlorophenol	0.345	0.351	0.360	0.365	0.360	0.354	------	------	0.356	2.03	4.0773
31	3,4-Dimethylphenol	0.500	0.493	0.498	0.505	0.490	0.481	------	------	0.495	1.72	4.1722
32	1,2,4-Trichlorobenzene	0.418	0.413	0.408	0.408	0.400	0.391	------	------	0.406	2.33	4.1786
33	Naphthalene	1.155	1.115	1.111	1.128	1.097	1.081	------	------	1.115	2.29	4.2703
34	4-Chloroaniline	0.472	0.478	0.482	0.486	0.469	0.461	------	------	0.475	1.94	4.3154
35	2,6-Dichlorophenol	0.332	0.338	0.340	0.344	0.337	0.329	------	------	0.337	1.66	4.3242
36	Hexachlorobutadiene	0.270	0.268	0.268	0.276	0.275	0.272	------	------	0.271	1.22	4.3950
37	Hydroquinone	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
38	4-Chloro-3-methylphenol	0.323	0.322	0.344	0.347	0.349	0.341	------	------	0.338	3.57	4.8362
39	2-Methylnaphthalene	0.815	0.786	0.785	0.796	0.770	0.754	------	------	0.784	2.67	5.0390
40	1-Methylnaphthalene	0.713	0.685	0.693	0.695	0.676	0.657	------	------	0.687	2.73	5.1532
41	Acenaphthene-d10	1	1	1	1	1	1	1	1	1	0	6.2716
42	Hexachlorocyclopentadiene	0.465	0.487	0.508	0.511	0.525	0.518	------	------	0.502	4.45	5.2179
43	2,3,5-Trichlorophenol	0.358	0.434	0.410	0.446	0.461	0.457	------	------	0.428	9.04	5.2235
44	2,4,6-Trichlorophenol	0.424	0.441	0.463	0.463	0.470	0.468	------	------	0.455	4.02	5.3558
45	2,4,5-Trichlorophenol	0.446	0.471	0.474	0.493	0.496	0.490	------	------	0.478	3.93	5.3912
46	2-Fluorobiphenyl	1.648	1.617	1.609	1.595	1.563	1.556	------	------	1.598	2.17	5.4661
47	2,3,4-Trichlorophenol	0.409	0.425	0.423	0.423	0.420	0.417	------	------	0.419	1.40	5.4692
48	Biphenyl	1.697	1.650	1.630	1.637	1.593	1.566	------	------	1.629	2.80	5.5847
49	2-Chloronaphthalene	1.356	1.337	1.319	1.317	1.291	1.420	------	------	1.340	3.36	5.6063
50	2-Nitroaniline	0.335	0.367	0.388	0.395	0.395	0.387	------	------	0.378	6.20	5.7214
51	2,6-Dimethylnaphthalene	1.180	1.162	1.148	1.168	1.142	1.123	------	------	1.154	1.76	5.7709
52	1,4-Dinitrobenzene	0.137	0.153	0.169	0.177	0.181	0.178	------	------	0.166	10.58	5.8904
53	Dimethylphthalate	1.479	1.464	1.499	1.478	1.474	1.443	------	------	1.473	1.25	5.9547
54	1,3-Dinitrobenzene	0.163	0.190	0.205	0.209	0.208	0.205	------	------	0.197	9.11	5.9788
55	2,6-Dinitrotoluene	0.284	0.294	0.304	0.309	0.309	0.307	------	------	0.301	3.30	6.0190
56	1,2-Dinitrobenzene	0.113	0.124	0.130	0.134	0.131	0.130	------	------	0.127	6.06	6.0793
57	Acenaphthylene	2.073	2.087	2.085	2.274	2.032	2.179	------	------	2.122	4.18	6.1010
58	3-Nitroaniline	0.292	0.317	0.318	0.322	0.321	0.320	------	------	0.315	3.68	6.2157

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59	Acenaphthene	1.364	1.337	1.327	1.337	1.316	1.287	------	------	1.328	1.93	6.3123
60	2,4-Dinitrophenol	0.067	0.091	0.122	0.132	0.142	0.143	------	------	0.116	26.38	6.3387
61	4-Nitrophenol	0.167	0.198	0.213	0.215	0.216	0.227	------	------	0.206	10.34	6.4058
62	2,4-Dinitrotoluene	0.337	0.387	0.399	0.413	0.406	0.408	------	------	0.392	7.16	6.5025
63	Dibenzofuran	1.937	1.905	1.886	1.893	1.864	1.830	------	------	1.886	1.94	6.5193
64	2,3,5,6-Tetrachlorophenol	0.272	0.293	0.319	0.328	0.335	0.327	------	------	0.312	7.84	6.6087
65	2,3,4,6-Tetrachlorophenol	0.400	0.418	0.430	0.438	0.449	0.444	------	------	0.430	4.25	6.6606
66	2,3,5-Trimethylnaphthalene	1.088	1.078	1.093	1.088	1.075	1.056	------	------	1.080	1.25	6.7738
67	Diethylphthalate	1.480	1.480	1.501	1.519	1.488	1.485	------	------	1.492	1.03	6.8113
68	Fluorene	1.499	1.484	1.477	1.480	1.445	1.428	------	------	1.469	1.82	6.9332
69	4-Chlorophenyl-phenylether	0.761	0.751	0.754	0.751	0.740	0.733	------	------	0.748	1.34	6.9387
70	4-Nitroaniline	0.287	0.305	0.312	0.347	0.342	0.351	------	------	0.324	8.12	6.9512
71	Phenanthrene-d10	1	1	1	1	1	1	1	1	1	0	8.0076
72	4,6-Dinitro-2-methylphenol	0.067	0.100	0.120	0.125	0.129	0.131	------	------	0.112	21.93	6.9879
73	N-Nitrosodiphenylamine	0.690	0.675	0.698	0.686	0.682	0.670	------	------	0.683	1.47	7.0776
74	Azobenzene	0.813	0.798	0.819	0.800	0.796	0.785	------	------	0.802	1.51	7.1275
75	2,4,6-Tribromophenol	0.083	0.093	0.098	0.100	0.102	0.101	------	------	0.096	7.59	7.2113
76	4-Bromophenyl-phenylether	0.247	0.232	0.244	0.239	0.240	0.240	------	------	0.240	2.11	7.5077
77	Hexachlorobenzene	0.249	0.240	0.246	0.242	0.246	0.243	------	------	0.244	1.23	7.5659
78	Pentachlorophenol	0.109	0.130	0.145	0.148	0.154	0.152	------	------	0.140	12.24	7.7887
79	Dibenzothiophene	1.276	1.233	1.252	1.230	1.207	1.205	------	------	1.234	2.20	7.8910
80	Phenanthrene	1.292	1.249	1.271	1.254	1.239	1.225	------	------	1.255	1.91	8.0338
81	Dinoseb	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
82	Anthracene	1.253	1.264	1.276	1.279	1.256	1.255	------	------	1.264	0.90	8.0902
83	Carbazole	1.091	1.079	1.086	1.075	1.048	1.065	------	------	1.074	1.46	8.2665
84	Di-n-butylphthalate	1.212	1.304	1.332	1.345	1.311	1.309	------	------	1.302	3.60	8.6604
85	1-Methylphenanthrene	0.884	0.895	0.900	0.898	0.874	0.889	------	------	0.890	1.11	8.7023
86	Fluoranthene	1.397	1.408	1.439	1.418	1.399	1.424	------	------	1.414	1.15	9.3110
87	Chrysene-d12	1	1	1	1	1	1	1	1	1	0	10.7882
88	Benzidine	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
89	Pyrene	1.341	1.325	1.351	1.452	1.391	1.346	------	------	1.368	3.42	9.5470
90	Terphenyl-d14	0.859	0.845	0.866	0.867	0.863	0.838	------	------	0.856	1.41	9.7126
91	Butylbenzylphthalate	0.361	0.439	0.490	0.499	0.502	0.491	------	------	0.464	11.98	10.2192
92	bis(2-ethylhexyl)adipate	0.306	0.373	0.403	0.407	0.405	0.394	------	------	0.381	10.19	10.2976
93	3,3'-Dichlorobenzidine	0.366	0.400	0.419	0.427	0.429	0.432	------	------	0.412	6.19	10.7475
94	Benzo(a)anthracene	1.234	1.206	1.235	1.249	1.248	1.243	------	------	1.236	1.31	10.7766
95	Chrysene	1.171	1.136	1.145	1.146	1.130	1.126	------	------	1.142	1.42	10.8139
96	bis(2-Ethylhexyl)phthalate	0.628	0.701	0.743	0.748	0.746	0.730	------	------	0.716	6.46	10.7985
97	Perylene-d12	1	1	1	1	1	1	1	1	1	0	12.2145
98	Di-n-octylphthalate	1.051	1.308	1.442	1.446	1.469	1.437	------	------	1.359	11.88	11.4203
99	Benzo(b)fluoranthene	1.264	1.219	1.280	1.341	1.275	1.317	------	------	1.283	3.32	11.8092
100	Benzo(k)fluoranthene	1.263	1.301	1.333	1.267	1.338	1.254	------	------	1.293	2.85	11.8374
101	Benzo(e)pyrene	1.149	1.165	1.198	1.205	1.194	1.193	------	------	1.184	1.87	12.0937
102	Benzo(a)pyrene	1.173	1.183	1.231	1.234	1.248	1.238	------	------	1.218	2.59	12.1520
103	Perylene	1.194	1.235	1.246	1.232	1.214	1.212	------	------	1.222	1.55	12.2451
104	Indeno(1,2,3-cd)pyrene	1.230	1.304	1.372	1.385	1.400	1.400	------	------	1.349	5.04	13.5598
105	Dibenzo(a,h)anthracene	1.051	1.074	1.140	1.158	1.166	1.153	------	------	1.124	4.34	13.5841
106	Benzo(g,h,i)perylene	1.149	1.113	1.158	1.176	1.185	1.174	------	------	1.159	2.24	13.9660

Ave_%RSD : 4.2 Max_%RSD : 26.4

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
27	Benzoic acid	-0.01353	0.27777	0.9993
60	2,4-Dinitrophenol	-0.01006	0.14884	0.9982
72	4,6-Dinitro-2-methylphenol	-0.00746	0.13623	0.9998

PM
08-08-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E4
Beginning DateTime :02/02/16 09:09
Spike Units :PPM
IC File :RBJ007

Column Spec :ZB-SEMI ID :0.18MM
Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02

IDX	Parameters	4 11:23 RBJ010	10 11:04 RBJ009	20 10:44 RBJ008	25 10:25 RBJ007	40 10:06 RBJ006	50 09:47 RBJ005	80 09:28 RBJ004	100 09:09 RBJ003	AvDRec	% RSD	Av Rt M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	0	3.0151
2	1,4-Dioxane	113	102	98	97	95	96	------	------	4.8	6.63	1.3665
3	N-nitrosodimethylamine	99	98	101	103	99	100	------	------	1.3	1.57	1.4769
4	Pyridine	104	104	105	106	104	103	88	87	6.4	7.97	1.5023
5	2-Fluorophenol	99	99	101	102	100	100	------	------	.8	1.13	2.0717
6	Phenol-d5	99	98	100	103	100	100	------	------	1.3	1.86	2.6593
7	Phenol	101	99	102	102	98	98	------	------	1.6	1.81	2.6706
8	Aniline	101	100	102	102	98	97	------	------	1.8	2.23	2.7436
9	bis(2-chloroethyl)ether	101	99	101	103	99	97	------	------	1.6	2.19	2.7723
10	2-Chlorophenol	96	96	99	100	104	105	------	------	3.1	3.81	2.8383
11	1,3-Dichlorobenzene	100	100	100	102	100	98	------	------	.9	1.34	2.9719
12	1,2-Dichlorobenzene-d4	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
13	1,4-Dichlorobenzene	101	99	102	101	99	98	------	------	1.3	1.55	3.0303
14	Benzyl alcohol	97	100	103	102	99	98	------	------	1.9	2.45	3.1095
15	1,2-Dichlorobenzene	101	101	101	102	98	97	------	------	1.8	2.20	3.1647
16	2-Methylphenol	102	99	101	102	98	97	------	------	1.7	1.93	3.1839
17	bis(2-chloroisopropyl)ether	104	100	102	101	97	95	------	------	2.4	3.22	3.2587
18	4-Methylphenol	96	97	101	102	107	98	------	------	3.4	2.62	3.3591
19	N-Nitroso-di-n-propylamine	93	96	99	100	108	104	------	------	3.1	4.06	3.3613
20	Hexachloroethane	98	98	102	103	100	99	------	------	2.1	5.54	3.3508
21	Naphthalene-d8	1	1	1	1	1	1	1	1	1.6	2.07	3.4769
22	Nitrobenzene-d5	98	99	100	102	101	100	------	------	1	0	4.2468
23	Nitrobenzene	100	99	101	102	100	98	------	------	1.2	1.58	3.5081
24	Isophorone	101	99	100	102	102	97	------	------	1	1.42	3.5281
25	2-Nitrophenol	86	97	103	107	106	101	------	------	1.5	1.07	3.7583
26	2,4-Dimethylphenol	100	100	100	102	100	98	------	------	5.5	7.64	3.8390
27	Benzoic acid	113	89	97	99	101	99	114	111	1	1.54	3.8542
28	bis(2-Chloroethoxy)methane	103	100	101	102	99	96	------	------	12.1	15.58	3.9464
29	3,5-Dimethylphenol	92	91	104	106	106	101	------	------	1.7	2.26	3.9652
30	2,4-Dichlorophenol	97	99	101	103	101	99	------	------	5.9	7.12	3.9931
31	3,4-Dimethylphenol	101	100	101	102	99	97	------	------	1.6	2.03	4.0773
32	1,2,4-Trichlorobenzene	103	102	100	100	99	96	------	------	1.3	1.72	4.1723
33	Naphthalene	104	100	100	101	98	97	------	------	1.8	2.42	4.1782
34	4-Chloroaniline	99	101	101	102	99	97	------	------	1.6	2.33	4.1786
35	2,6-Dichlorophenol	99	100	101	102	100	98	------	------	1.6	2.29	4.2703
36	Hexachlorobutadiene	100	99	99	102	101	100	------	------	1.5	1.94	4.3154
37	Hydroquinone	------	------	------	------	------	------	------	------	1.2	1.66	4.3242
38	4-Chloro-3-methylphenol	96	95	102	103	103	101	------	------	1	1.22	4.3950
39	2-Methylnaphthalene	104	100	100	102	98	96	------	------	0.000	0.00	0.0000
40	1-Methylnaphthalene	104	100	101	101	98	96	------	------	3	3.57	4.8362
41	Acenaphthene-d10	1	1	1	1	1	1	1	1	1.8	2.67	5.0320
42	Hexachlorocyclopentadiene	93	97	101	102	105	103	------	------	2	2.73	5.1532
43	2,3,5-Trichlorophenol	84	101	96	104	108	107	------	------	1	0	6.2716
44	2,4,6-Trichlorophenol	93	97	102	102	103	103	------	------	3.5	4.45	5.2179
45	2,4,5-Trichlorophenol	93	99	99	103	104	103	------	------	6.8	9.04	5.2235
46	2-Fluorobiphenyl	103	101	101	100	98	97	------	------	3.3	4.02	5.2558
47	2,3,4-Trichlorophenol	98	101	101	101	100	100	------	------	3.1	3.93	5.3912
48	Biphenyl	104	101	100	100	98	96	------	------	1.7	2.17	5.4211
49	2-Chloronaphthalene	101	100	98	98	96	106	------	------	1.1	1.40	5.4662
50	2-Nitroaniline	89	97	103	104	104	102	------	------	2	2.80	5.5692
51	2,6-Dimethylnaphthalene	102	101	99	101	99	97	------	------	2.4	3.36	5.5847
52	1,4-Dinitrobenzene	83	92	102	107	109	107	------	------	4.7	6.20	5.6063
53	Dimethylphthalate	100	99	102	100	100	98	------	------	1.4	1.76	5.7214
54	1,3-Dinitrobenzene	83	96	104	106	106	104	------	------	8.3	10.58	5.7709
55	2,6-Dinitrotoluene	94	98	101	103	103	102	------	------	.9	1.25	5.8904
56	1,2-Dinitrobenzene	89	98	102	106	103	102	------	------	.8	1.25	5.8947
57	Acenaphthylene	98	98	98	107	96	103	------	------	6.8	9.11	5.9788
58	3-Nitroaniline	93	101	101	102	102	102	------	------	2.7	3.30	6.0190
59	Acenaphthene	103	101	100	101	99	97	------	------	4.5	6.06	6.0793
60	2,4-Dinitrophenol	113	89	96	100	102	102	------	------	3.3	4.18	6.1010
61	4-Nitrophenol	81	96	103	104	105	110	------	------	2.4	3.68	6.2157
62	2,4-Dinitrotoluene	86	99	102	105	104	104	------	------	1.4	1.93	6.3123
63	Dibenzofuran	103	101	100	100	99	97	------	------	21.4	26.38	6.3387
64	2,3,5,6-Tetrachlorophenol	87	94	102	105	107	105	------	------	7.6	10.34	6.4058
65	2,3,4,6-Tetrachlorophenol	93	97	100	102	104	103	------	------	5	7.16	6.5025
66	2,3,5-Trimethylnaphthalene	101	100	101	101	100	98	------	------	1.4	1.94	6.5193
67	Diethylphthalate	99	99	101	102	100	100	------	------	6.4	7.84	6.6087
68	Fluorene	102	101	101	101	98	97	------	------	3.2	4.25	6.6606
69	4-Chlorophenyl-phenylether	102	100	101	100	99	98	------	------	.6	1.55	6.7738
70	4-Nitroaniline	89	94	96	107	106	108	------	------	.8	1.03	6.8113
71	Phenanthrene-d10	1	1	1	1	1	1	1	1	1.5	1.82	6.9332
72	4,6-Dinitro-2-methylphenol	104	96	99	101	100	101	------	------	1.1	1.34	6.9387
73	N-Nitrosodiphenylamine	101	99	102	100	100	98	------	------	7	8.12	6.9512
74	Azobenzene	101	100	102	100	99	98	------	------	1	0	8.0076
75	2,4,6-Tribromophenol	86	97	102	104	106	105	------	------	17	21.93	6.9879
76	4-Bromophenyl-phenylether	103	97	102	100	100	100	------	------	1.1	1.47	7.0776
77	Hexachlorobenzene	102	98	101	99	101	100	------	------	1.2	1.51	7.1275
78	Pentachlorophenol	78	93	104	106	110	109	------	------	5.7	7.59	7.2113
79	Dibenzothiophene	103	100	101	100	98	98	------	------	1.4	2.11	7.5077
80	Phenanthrene	103	100	101	100	99	98	------	------	1.1	1.23	7.5659
81	Dinoseb	------	------	------	------	------	------	------	------	9.5	12.24	7.7887
82	Anthracene	99	100	101	101	99	99	------	------	1.6	2.20	7.8910
83	Carbazole	102	100	101	100	98	99	------	------	1.4	1.91	8.0338
84	Di-n-butylphthalate	93	100	102	103	101	101	------	------	0.000	0.00	0.0000
85	1-Methylphenanthrene	99	101	101	101	98	100	------	------	.7	0.90	8.0902
86	Fluoranthene	99	100	102	100	99	101	------	------	1.1	1.46	8.2665
87	Chrysene-d12	1	1	1	1	1	1	1	1	2.3	3.60	8.6604
88	Benzidine	------	------	------	------	------	------	------	------	.9	1.11	8.7023
89	Pyrene	98	97	99	106	102	98	------	------	.9	1.15	9.3110
90	Terphenyl-d14	100	99	101	101	101	98	------	------	1	0	10.7882
91	Butylbenzylphthalate	78	95	106	108	108	106	------	------	0.000	0.00	0.0000
92	bis(2-ethylhexyl)adipate	80	98	106	107	106	103	------	------	2.6	3.42	9.5470
93	3,3'-Dichlorobenzidine	89	97	102	104	104	105	------	------	1.2	1.41	9.7126
94	Benzo(a)anthracene	100	98	100	101	101	101	------	------	9.1	11.98	10.2192
95	Chrysene	103	99	100	100	99	99	------	------	7.3	10.19	10.2976
96	bis(2-Ethylhexyl)phthalate	88	98	104	104	104	102	------	------	4.7	6.19	10.7475
97	Perylene-d12	1	1	1	1	1	1	1	1	.9	1.31	10.7766
98	Di-n-octylphthalate	77	96	106	106	108	106	------	------	1	1.42	10.8139
99	Benzo(b)fluoranthene	99	95	100	105	99	103	------	------	4.8	6.46	10.7985
100	Benzo(k)fluoranthene	98	101	103	98	103	97	------	------	1	0	12.2145
101	Benzo(e)pyrene	97	98	101	102	101	101	------	------	8.8	11.88	11.4203
102	Benzo(a)pyrene	96	97	101	101	102	102	------	------	5.4	3.32	11.8092
103	Perylene	98	101	102	101	99	99	------	------	5.4	3.85	11.8374
104	Indeno(1,2,3-cd)pyrene	91	97	102	103	104	104	------	------	5.5	5.82	12.0937
105	Dibenzo(a,h)anthracene	94	96	101	103	104	103	------	------	1.5	1.87	12.1520
106	Benzo(g,h,i)perylene	99	96	100	101	102	101	------	------	2.2	2.59	12.2451
										1.3	1.55	12.5598
										4	5.04	13.5841
										3.6	4.34	13.9660
										1.7	2.24	

02-08-16

432

Compound List Report E4

Method Path : C:\msdchem\1\METHODS\
Method File : SVE4B02.M
Title : SEMIVOLATILES
Last Update : Tue Feb 02 13:41:58 2016
Response Via : Initial Calibration

Total Cpnds : 106

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dichlorobenzene-d4	152	3.015	1.000	A	1	A	B
2	T	1,4-Dioxane	88	1.366	0.453	A	1	A	B
3	T	N-nitrosodimethylamine	74	1.476	0.490	A	1	A	B
4	T	Pyridine	79	1.505	0.499	A	1	A	B
5	S	2-Fluorophenol	112	2.070	0.687	A	1	A	B
6	S	Phenol-d5	99	2.659	0.882	A	1	A	B
7	C,P	Phenol	94	2.670	0.886	A	1	A	B
8	T	Aniline	93	2.743	0.910	A	1	A	B
9	T	bis(2-chloroethyl)ether	93	2.774	0.920	A	1	A	B
10	T	2-Chlorophenol	128	2.836	0.941	A	1	A	B
11	T	1,3-Dichlorobenzene	146	2.972	0.986	A	1	A	B
12	S	1,2-Dichlorobenzene-d4	152	0.000	0.000	A	1	A	B
13	C	1,4-Dichlorobenzene	146	3.029	1.005	A	1	A	B
14	T	Benzyl alcohol	108	3.111	1.032	A	1	A	B
15	T	1,2-Dichlorobenzene	146	3.164	1.049	A	1	A	B
16	T	2-Methylphenol	107	3.183	1.056	A	1	A	B
17	T	bis(2-chloroisopropyl)ether	45	3.231	1.072	A	1	A	B
18	T	4-Methylphenol	107	3.322	1.102	A	1	A	B
19	P,P	N-Nitroso-di-n-propylamine	70	3.351	1.111	A	1	A	B
20	T	Hexachloroethane	117	3.475	1.153	A	1	A	B
21	I	Naphthalene-d8	136	4.248	1.000	A	1	A	B
22	S	Nitrobenzene-d5	82	3.509	0.826	A	1	A	B
23	T	Nitrobenzene	77	3.528	0.831	A	1	A	B
24	T	Isophorone	82	3.758	0.885	A	1	A	B
25	C,P	2-Nitrophenol	139	3.840	0.904	A	1	A	B
26	T	2,4-Dimethylphenol	107	3.854	0.907	A	1	A	B
27	T	Benzoic acid	105	3.936	0.927	L	1	A	B
28	T	bis(2-Chloroethoxy)methane	93	3.964	0.933	A	1	A	B
29	T	3,5-Dimethylphenol	107	3.993	0.940	A	1	A	B
30	C,P	2,4-Dichlorophenol	162	4.080	0.960	A	1	A	B
31	T	3,4-Dimethylphenol	107	4.171	0.982	A	1	A	B
32	T	1,2,4-Trichlorobenzene	180	4.181	0.984	A	1	A	B
33	T	Naphthalene	128	4.273	1.006	A	1	A	B
34	T	4-Chloroaniline	127	4.316	1.016	A	1	A	B
35	T	2,6-Dichlorophenol	162	4.326	1.018	A	1	A	B
36	C	Hexachlorobutadiene	225	4.393	1.034	A	1	A	B
37	T	Hydroquinone	110	0.000	0.000	A	1	A	B
38	C,P	4-Chloro-3-methylphenol	107	4.837	1.139	A	1	A	B
39	T	2-Methylnaphthalene	142	5.038	1.186	A	1	A	B
40	T	1-Methylnaphthalene	142	5.153	1.213	A	1	A	B
41	I	Acenaphthene-d10	164	6.274	1.000	A	1	A	B
42	P	Hexachlorocyclopentadiene	237	5.220	0.832	A	1	A	B
43	T	2,3,5-Trichlorophenol	196	5.225	0.833	A	1	A	B
44	C,P	2,4,6-Trichlorophenol	196	5.355	0.854	A	1	A	B
45	T	2,4,5-Trichlorophenol	196	5.393	0.860	A	1	A	B
46	S	2-Fluorobiphenyl	172	5.466	0.871	A	1	A	B
47	T	2,3,4-Trichlorophenol	196	5.471	0.872	A	1	A	B
48	T	Biphenyl	154	5.586	0.890	A	1	A	B
49	T	2-Chloronaphthalene	162	5.605	0.893	A	1	A	B
50	T	2-Nitroaniline	65	5.720	0.912	A	1	A	B
51	T	2,6-Dimethylnaphthalene	156	5.773	0.920	A	1	A	B
52	T	1,4-Dinitrobenzene	168	5.889	0.939	A	1	A	B
53	T	Dimethylphthalate	163	5.956	0.949	A	1	A	B
54	T	1,3-Dinitrobenzene	168	5.980	0.953	A	1	A	B

PW 02-08-16

55	T	2,6-Dinitrotoluene	165	6.019	0.959	A	1	A	B
56	T	1,2-Dinitrobenzene	168	6.082	0.969	A	1	A	B
57	T	Acenaphthylene	152	6.101	0.972	A	1	A	B
58	T	3-Nitroaniline	138	6.216	0.991	A	1	A	B
59	C,P	Acenaphthene	153	6.312	1.006	A	1	A	B
60	P	2,4-Dinitrophenol	184	6.341	1.011	L	1	A	B
61	P	4-Nitrophenol	109	6.408	1.021	A	1	A	B
62	T	2,4-Dinitrotoluene	165	6.504	1.037	A	1	A	B
63	T	Dibenzofuran	168	6.518	1.039	A	1	A	B
64	T	2,3,5,6-Tetrachlorophenol	230	6.609	1.053	A	1	A	B
65	T	2,3,4,6-Tetrachlorophenol	232	6.662	1.062	A	1	A	B
66	T	2,3,5-Trimethylnaphthalene	170	6.776	1.080	A	1	A	B
67	T	Diethylphthalate	149	6.813	1.086	A	1	A	B
68	T	Fluorene	166	6.935	1.105	A	1	A	B
69	T	4-Chlorophenyl-phenylether	204	6.940	1.106	A	1	A	B
70	T	4-Nitroaniline	138	6.954	1.108	A	1	A	B
71	I	Phenanthrene-d10	188	8.009	1.000	A	1	A	B
72	T	4,6-Dinitro-2-methylphenol	198	6.987	0.872	L	1	A	B
73	C	N-Nitrosodiphenylamine	169	7.077	0.884	A	1	A	B
74	T	Azobenzene	77	7.129	0.890	A	1	A	B
75	S	2,4,6-Tribromophenol	330	7.210	0.900	A	1	A	B
76	T	4-Bromophenyl-phenylether	248	7.508	0.937	A	1	A	B
77	T	Hexachlorobenzene	284	7.565	0.945	A	1	A	B
78	C,P	Pentachlorophenol	266	7.787	0.972	A	1	A	B
79	T	Dibenzothiophene	184	7.891	0.985	A	1	A	B
80	T	Phenanthrene	178	8.032	1.003	A	1	A	B
81	T	Dinoseb	211	0.000	0.000	A	1	A	B
82	T	Anthracene	178	8.089	1.010	A	1	A	B
83	T	Carbazole	167	8.267	1.032	A	1	A	B
84	T	Di-n-butylphthalate	149	8.659	1.081	A	1	A	B
85	T	1-Methylphenanthrene	192	8.702	1.087	A	1	A	B
86	C,P	Fluoranthene	202	9.311	1.163	A	1	A	B
87	I	Chrysene-d12	240	10.791	1.000	A	1	A	B
88	T	Benzidine	184	0.000	0.000	A	1	A	B
89	T	Pyrene	202	9.547	0.885	A	1	A	B
90	S	Terphenyl-d14	244	9.716	0.900	A	1	A	B
91	T	Butylbenzylphthalate	149	10.218	0.947	A	1	A	B
92	T	bis(2-ethylhexyl)adipate	129	10.299	0.954	A	1	A	B
93	T	3,3'-Dichlorobenzidine	252	10.748	0.996	A	1	A	B
94	T	Benzo(a)anthracene	228	10.777	0.999	A	1	A	B
95	T	Chrysene	228	10.816	1.002	A	1	A	B
96	T	bis(2-Ethylhexyl)phthalate	149	10.801	1.001	A	1	A	B
97	I	Perylene-d12	264	12.218	1.000	A	1	A	B
98	C	Di-n-octylphthalate	149	11.422	0.935	A	1	A	B
99	T	Benzo(b)fluoranthene	252	11.811	0.967	A	1	A	B
100	T	Benzo(k)fluoranthene	252	11.840	0.969	A	1	A	B
101	T	Benzo(e)pyrene	252	12.096	0.990	A	1	A	B
102	C,P	Benzo(a)pyrene	252	12.155	0.995	A	1	A	B
103	T	Perylene	252	12.247	1.002	A	1	A	B
104	T	Indeno(1,2,3-cd)pyrene	276	13.563	1.110	A	1	A	B
105	T	Dibenzo(a,h)anthracene	278	13.587	1.112	A	1	A	B
106	T	Benzo(g,h,i)perylene	276	13.971	1.143	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

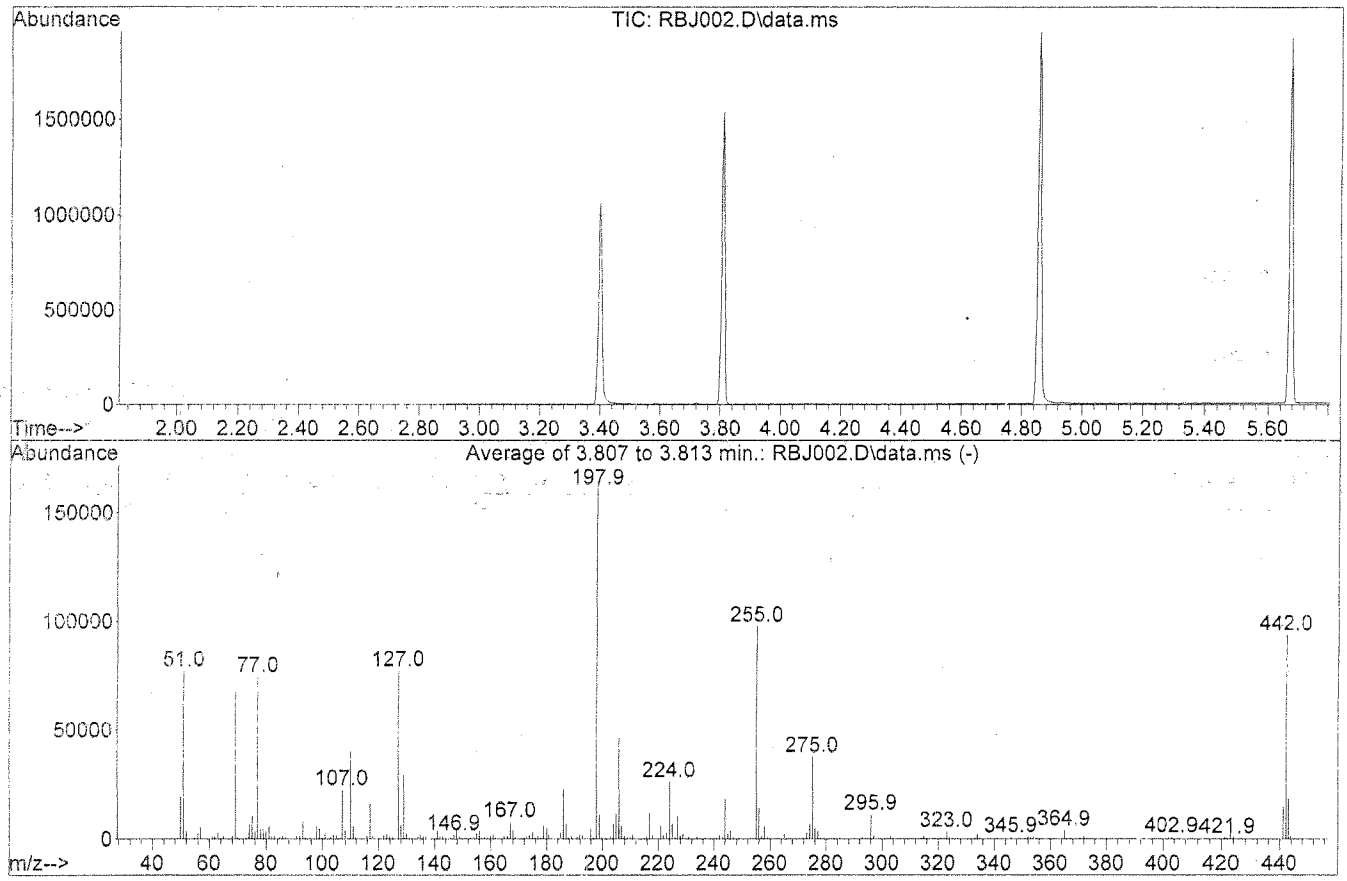
SVE4B02.M Tue Feb 02 13:45:46 2016

pu 02-08-16

Data Path : D:\DATA\16B02\
Data File : RBJ002.D
Acq On : 2 Feb 2016 8:58
Operator : KVu
Sample : DFTE4B0201
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP 8270D
Last Update : Tue Feb 02 13:55:35 2016



AutoFind: Scans 327, 328, 329; Background Corrected with Scan 319

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	47.0	77064	PASS
68	69	0.00	2	1.8	1246	PASS
69	198	0.00	100	41.4	67760	PASS
70	69	0.00	2	0.8	530	PASS
127	198	10	80	47.0	77040	PASS
197	198	0.00	2	0.1	238	PASS
198	198	100	100	100.0	163819	PASS
199	198	5	9	6.7	10948	PASS
275	198	10	60	23.0	37632	PASS
365	198	1	100	2.4	3963	PASS
441	442	0.01	24	15.5	14505	PASS
442	198	50	100	57.2	93643	PASS
443	442	15	24	19.7	18463	PASS

02-08-16

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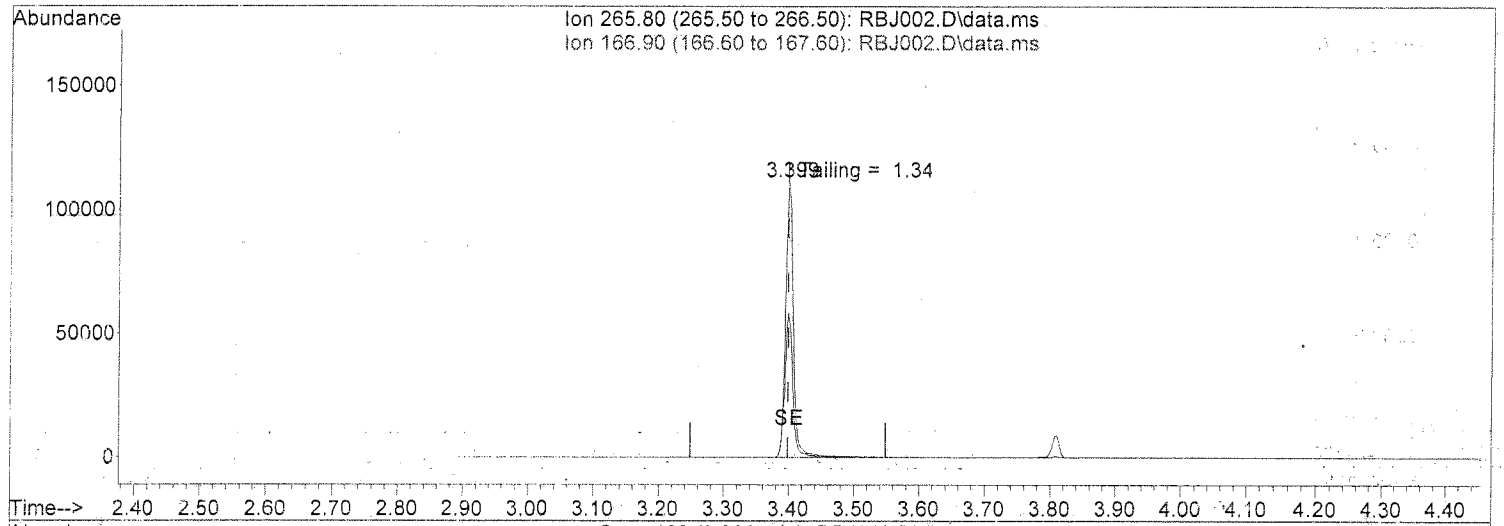
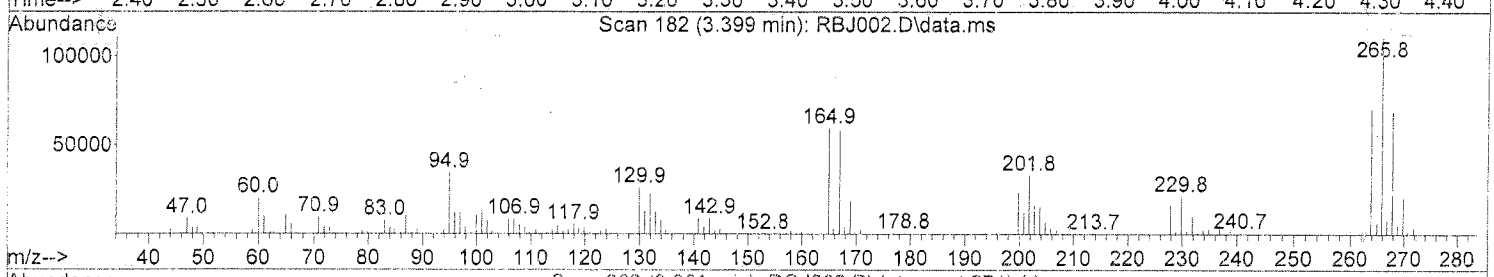
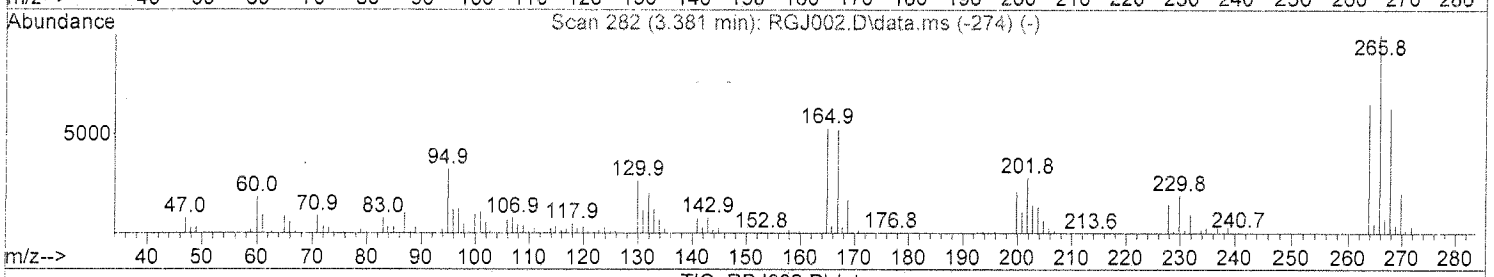
Quantitation Report (Qedit)

Data File : D:\DATA\16B02\RBJ002.D
Acq On : 2 Feb 2016 8:58
Sample : DFTE4B0201
Misc :
Integrator: RTE
Quant Time: Feb 02 13:55:37 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:36 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ002.D\data.ms

(1) Pentachlorophenol (T)

3.399min (+0.000) 50.00 ppm

response 91472

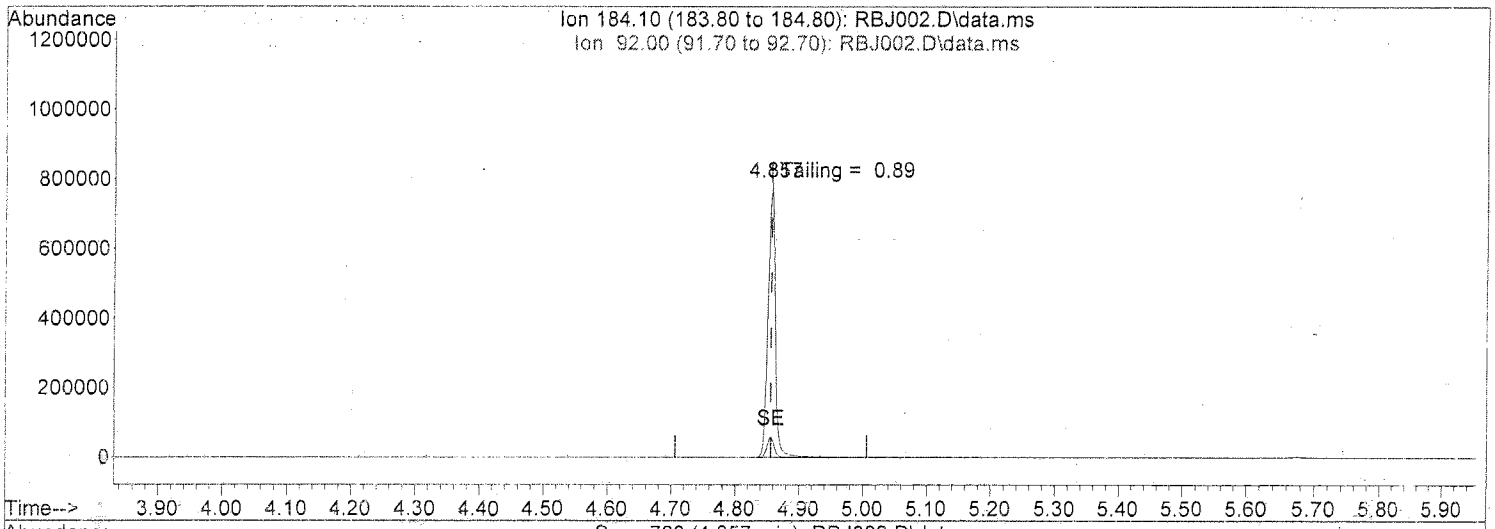
Ion	Exp%	Act%
265.80	100	100
166.90	53.80	53.80
0.00	0.00	0.00
0.00	0.00	0.00

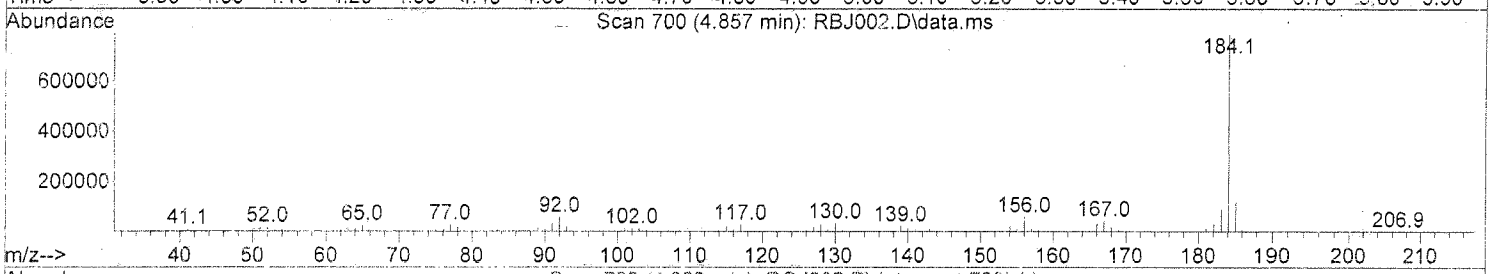
02-08-16

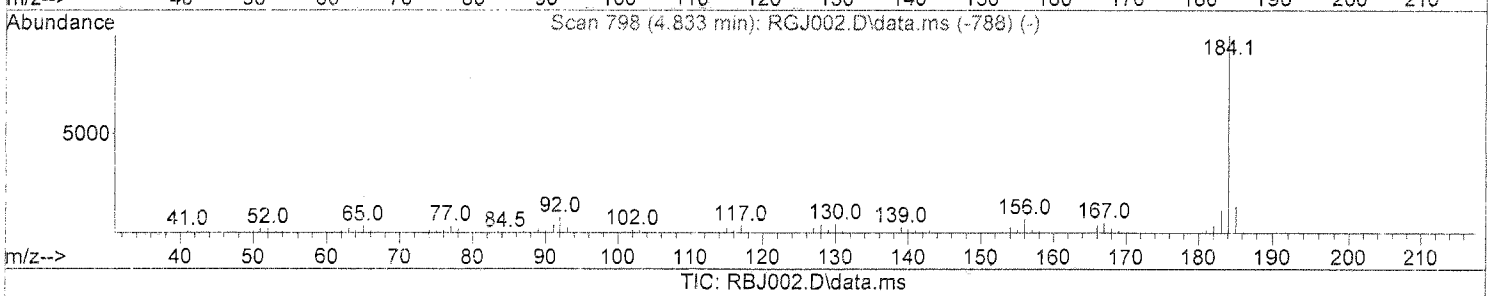
Quantitation Report (Qedit)

Data File : D:\DATA\16B02\RBJ002.D
Acq On : 2 Feb 2016 8:58
Sample : DFTE4B0201
Misc :
Integrator: RTE
Quant Time: Feb 02 13:55:37 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:36 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ002.D\data.ms

(3) Benzidine (T)

4.857min (0.000) 50.00 ppm

response 619113

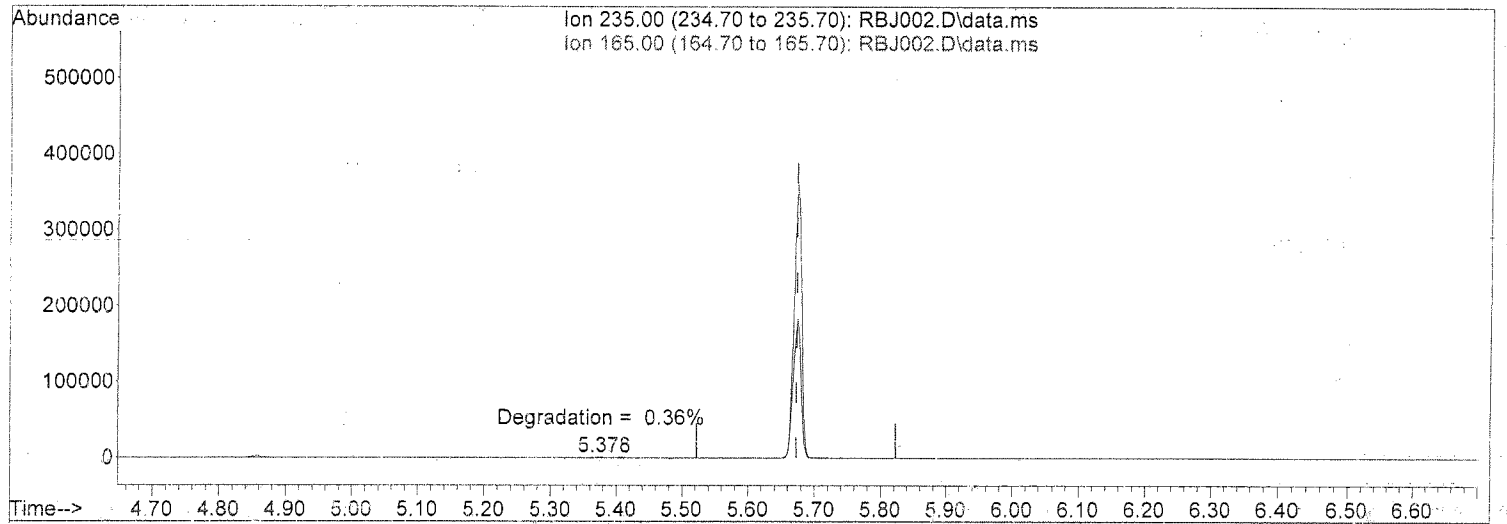
Ion	Exp%	Act%
184.10	100	100
92.00	7.50	7.46
0.00	0.00	0.00
0.00	0.00	0.00

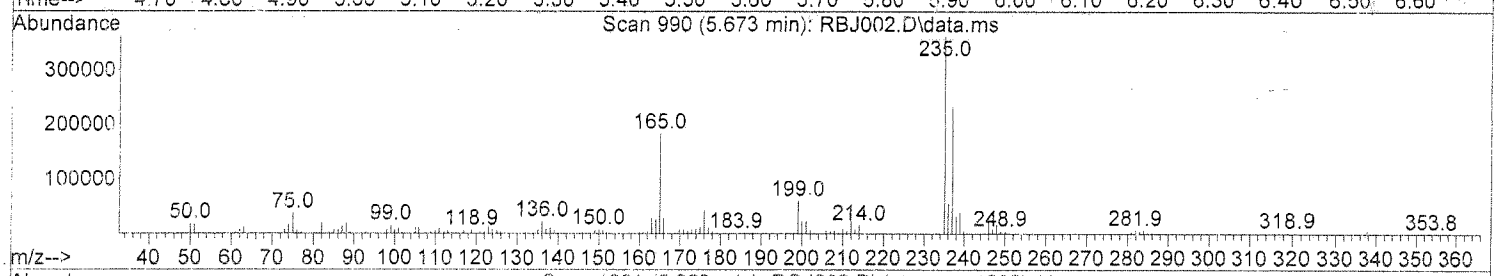
pu 02-08-16

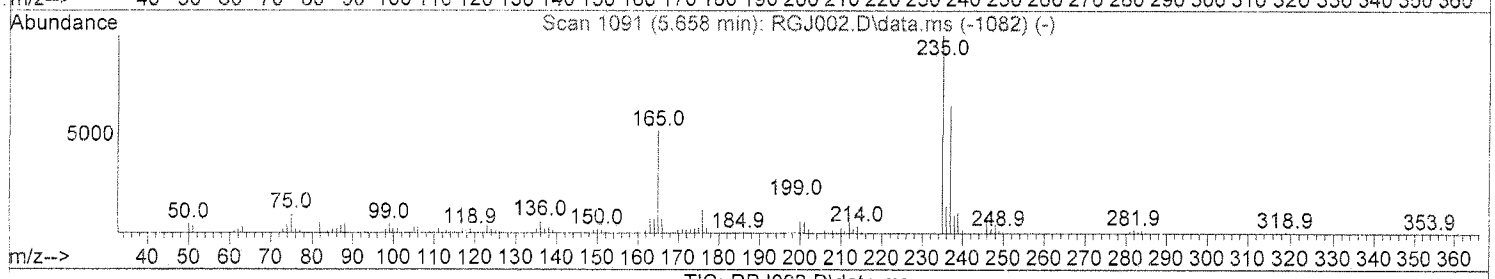
Quantitation Report (Qedit)

Data File : D:\DATA\16B02\RBJ002.D
Acq On : 2 Feb 2016 8:58
Sample : DFTE4B0201
Misc :
Integrator: RTE
Quant Time: Feb 02 13:55:37 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:36 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ002.D\data.ms

(6) DDT (T)

5.673min (0.000) 50.00 ppm

response 287336

Ion	Exp%	Act%
235.00	100	100
165.00	51.10	51.13
0.00	0.00	0.00
0.00	0.00	0.00

02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	432154	40.00	ppm	0.00
21) Naphthalene-d8	4.244	136	1547249	40.00	ppm	0.00
41) Acenaphthene-d10	6.269	164	918028	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1630524	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1830134	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1579900	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	56270	3.96	ppm	0.00
Spiked Amount 30.000			Recovery	=	13.20%	
6) Phenol-d5	2.654	99	69411	3.96	ppm	0.00
Spiked Amount 30.000			Recovery	=	13.20%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.504	82	68600	3.93	ppm	0.00
Spiked Amount 10.000			Recovery	=	39.30%	
46) 2-Fluorobiphenyl	5.461	172	151292	4.13	ppm	0.00
Spiked Amount 10.000			Recovery	=	41.30%	
75) 2,4,6-Tribromophenol	7.210	330	13483	3.44	ppm	0.00
Spiked Amount 30.000			Recovery	=	11.47%	
90) Terphenyl-d14	9.707	244	157297	4.01	ppm	0.00
Spiked Amount 10.000			Recovery	=	40.10%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	29143	4.50	ppm	91
3) N-nitrosodimethylamine	1.477	74	36345	3.96	ppm	94
4) Pyridine	1.505	79	68558	4.15	ppm	97
7) Phenol	2.665	94	73224	4.03	ppm	100
8) Aniline	2.738	93	93791	4.06	ppm	99
9) bis(2-chloroethyl)ether	2.769	93	55513	4.03	ppm	97
10) 2-Chlorophenol	2.837	128	58899	3.84	ppm	93
11) 1,3-Dichlorobenzene	2.972	146	71797	4.02	ppm	96
13) 1,4-Dichlorobenzene	3.030	146	73287	4.04	ppm	98
14) Benzyl alcohol	3.106	108	38157	3.87	ppm	100
15) 1,2-Dichlorobenzene	3.164	146	70328	4.06	ppm	98
16) 2-Methylphenol	3.178	107	50591	4.08	ppm	98
17) bis(2-chloroisopropyl)...	3.226	45	119827	4.18	ppm	99
18) 4-Methylphenol	3.317	107	63038	3.84	ppm	99
19) N-Nitroso-di-n-propyla...	3.341	70	42751	3.72	ppm	91
20) Hexachloroethane	3.475	117	27260	3.93	ppm	95
23) Nitrobenzene	3.523	77	70208	4.01	ppm	97
24) Isophorone	3.749	82	135494	4.03	ppm	95
25) 2-Nitrophenol	3.835	139	24398	3.45	ppm	92
26) 2,4-Dimethylphenol	3.849	107	64645	3.98	ppm	91
27) Benzoic acid	3.878	105	27390	4.50	ppm	77
28) bis(2-Chloroethoxy)met...	3.960	93	72181	4.11	ppm	99
29) 3,5-Dimethylphenol	3.988	107	64358	3.67	ppm	88
30) 2,4-Dichlorophenol	4.075	162	53393	3.88	ppm	99
31) 3,4-Dimethylphenol	4.167	107	77288	4.04	ppm	100
32) 1,2,4-Trichlorobenzene	4.176	180	64711	4.12	ppm	100
33) Naphthalene	4.268	128	178696	4.15	ppm	100
34) 4-Chloroaniline	4.311	127	73097	3.98	ppm	99
35) 2,6-Dichlorophenol	4.321	162	51295	3.94	ppm	100
36) Hexachlorobutadiene	4.393	225	41700	3.97	ppm	99

m 02-08-16

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.832	107	49964	3.83	ppm	98
39)	2-Methylnaphthalene	5.034	142	126083	4.16	ppm	100
40)	1-Methylnaphthalene	5.149	142	110276	4.15	ppm	98
42)	Hexachlorocyclopentadiene	5.216	237	42680	3.70	ppm	99
43)	2,3,5-Trichlorophenol	5.220	196	32884	3.35	ppm	98
44)	2,4,6-Trichlorophenol	5.350	196	38949	3.73	ppm	100
45)	2,4,5-Trichlorophenol	5.389	196	40981	3.73	ppm	99
47)	2,3,4-Trichlorophenol	5.466	196	37526	3.90	ppm	92
48)	Biphenyl	5.582	154	155802	4.17	ppm	100
49)	2-Chloronaphthalene	5.601	162	124512	4.05	ppm	99
50)	2-Nitroaniline	5.716	65	30748	3.55	ppm	100
51)	2,6-Dimethylnaphthalene	5.769	156	108318	4.09	ppm	100
52)	1,4-Dinitrobenzene	5.884	168	12540	3.29	ppm	99
53)	Dimethylphthalate	5.947	163	135780	4.02	ppm	99
54)	1,3-Dinitrobenzene	5.971	168	14934	3.31	ppm	88
55)	2,6-Dinitrotoluene	6.009	165	26092	3.77	ppm	98
56)	1,2-Dinitrobenzene	6.067	168	10358	3.56	ppm	99
57)	Acenaphthylene	6.096	152	190343	3.91	ppm	96
58)	3-Nitroaniline	6.207	138	26777	3.70	ppm	98
59)	Acenaphthene	6.308	153	125181	4.11	ppm	100
60)	2,4-Dinitrophenol	6.332	184	6150	4.50	ppm	97
61)	4-Nitrophenol	6.394	109	15334	3.24	ppm	99
62)	2,4-Dinitrotoluene	6.495	165	30972	3.45	ppm	97
63)	Dibenzofuran	6.514	168	177830	4.11	ppm	99
64)	2,3,5,6-Tetrachlorophenol	6.605	230	25009	3.49	ppm	96
65)	2,3,4,6-Tetrachlorophenol	6.657	232	36700	3.72	ppm	88
66)	2,3,5-Trimethylnaphtha...	6.767	170	99855	4.03	ppm	99
67)	Diethylphthalate	6.804	149	135865	3.97	ppm	99
68)	Fluorene	6.926	166	137588	4.08	ppm	99
69)	4-Chlorophenyl-phenyle...	6.936	204	69827	4.07	ppm	99
70)	4-Nitroaniline	6.936	138	26352	3.54	ppm	92
72)	4,6-Dinitro-2-methylph...	6.978	198	10957	4.16	ppm	99
73)	N-Nitrosodiphenylamine	7.072	169	112554	4.04	ppm	100
74)	Azobenzene	7.124	77	132536	4.05	ppm	99
76)	4-Bromophenyl-phenylether	7.504	248	40235	4.11	ppm	95
77)	Hexachlorobenzene	7.560	284	40522	4.07	ppm	98
78)	Pentachlorophenol	7.787	266	17804	3.13	ppm	98
79)	Dibenzothiophene	7.886	184	208037	4.14	ppm	99
80)	Phenanthrene	8.032	178	210651	4.12	ppm	100
82)	Anthracene	8.084	178	204329	3.97	ppm	100
83)	Carbazole	8.263	167	177876	4.06	ppm	100
84)	Di-n-butylphthalate	8.659	149	197641	3.72	ppm	100
85)	1-Methylphenanthrene	8.697	192	144115	3.97	ppm	100
86)	Fluoranthene	9.306	202	227717	3.95	ppm	99
89)	Pyrene	9.542	202	245502	3.92	ppm	96
91)	Butylbenzylphthalate	10.218	149	65997	3.11	ppm	98
92)	bis(2-ethylhexyl)adipate	10.295	129	56046	3.21	ppm	94
93)	3,3'-Dichlorobenzidine	10.743	252	66927	3.55	ppm	95
94)	Benzo(a)anthracene	10.772	228	225775	3.99	ppm	99
95)	Chrysene	10.806	228	214346	4.10	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.796	149	115001	3.51	ppm	99
98)	Di-n-octylphthalate	11.417	149	166019	3.09	ppm	99
99)	Benzo(b)fluoranthene	11.801	252	199736	3.94	ppm	98
100)	Benzo(k)fluoranthene	11.830	252	199481	3.91	ppm	97
101)	Benzo(e)pyrene	12.086	252	181471	3.88	ppm	96

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.140	252	185290	3.85 ppm	97
103) Perylene	12.237	252	188683	3.91 ppm	97
104) Indeno(1,2,3-cd)pyrene	13.544	276	194400	3.65 ppm	95
105) Dibenzo(a,h)anthracene	13.568	278	165976	3.74 ppm	98
106) Benzo(g,h,i)perylene	13.942	276	181505	3.96 ppm	96

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

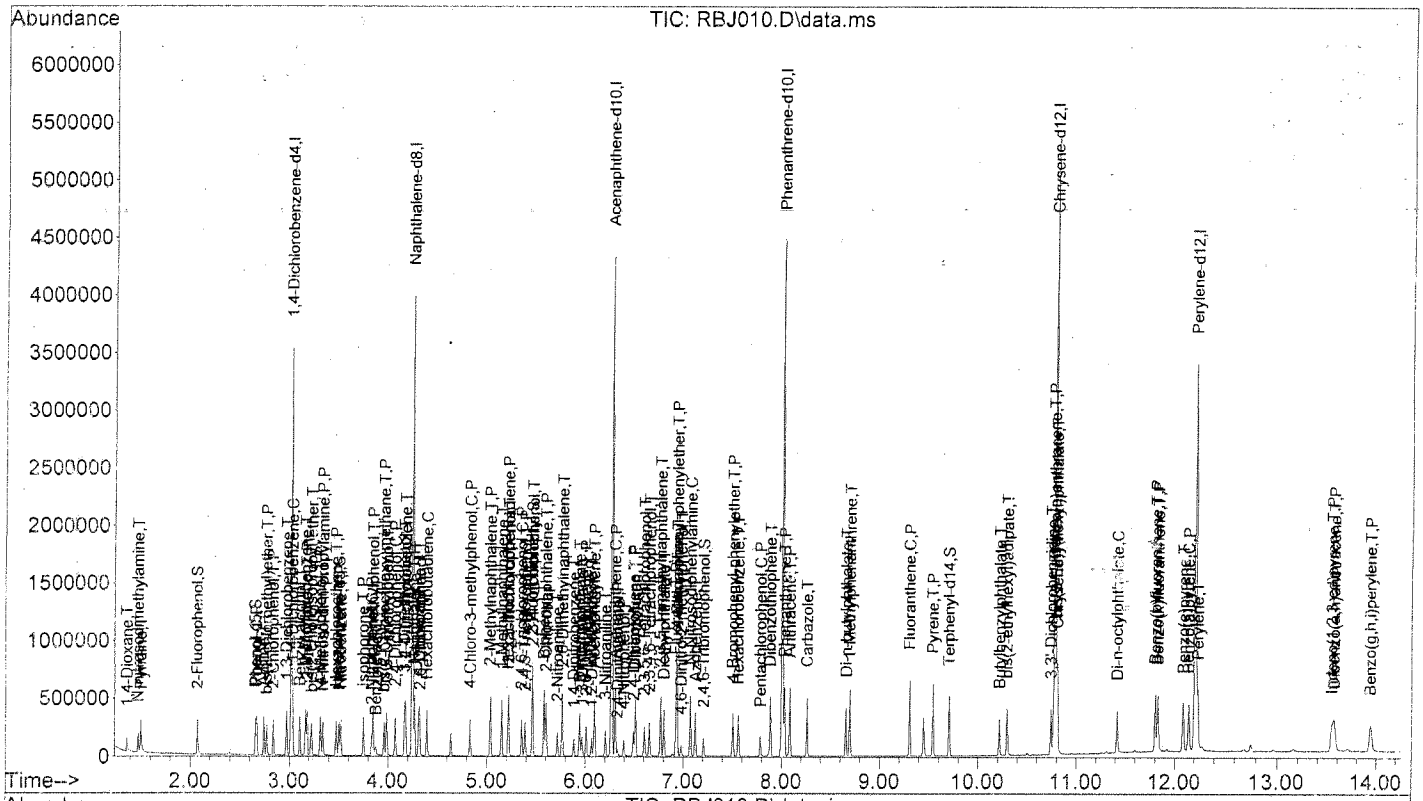
pu 02-08-16

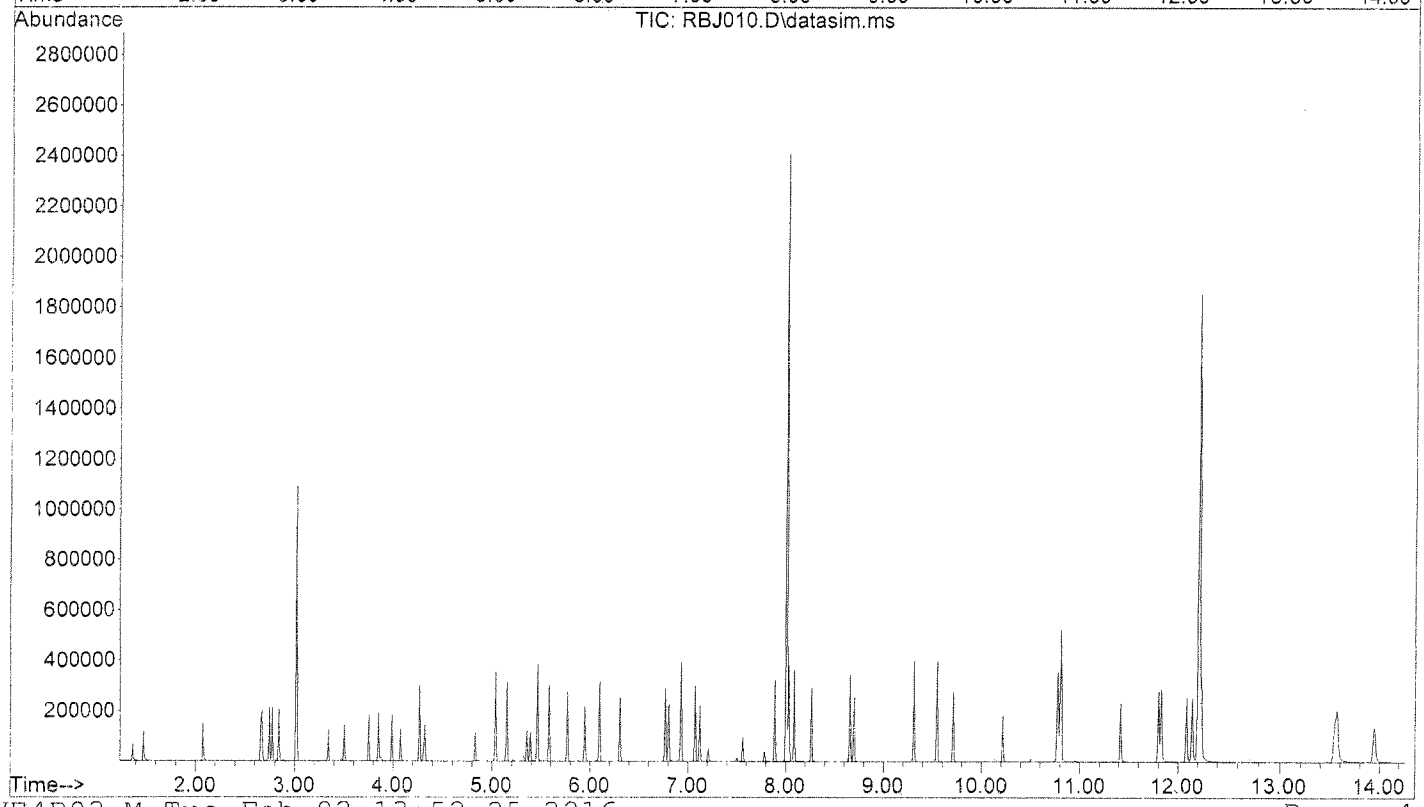
441

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00





M 02-08-16 442

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	432450	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1552213	40.00	ppm	0.00
41) Acenaphthene-d10	6.269	164	916662	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1649622	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1883963	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1610421	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	140279	9.88	ppm	0.00
Spiked Amount 30.000			Recovery	=	32.93%	
6) Phenol-d5	2.654	99	171821	9.79	ppm	0.00
Spiked Amount 30.000			Recovery	=	32.63%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.504	82	172971	9.88	ppm	0.00
Spiked Amount 10.000			Recovery	=	98.80%	
46) 2-Fluorobiphenyl	5.464	172	370670	10.12	ppm	0.00
Spiked Amount 10.000			Recovery	=	101.20%	
75) 2,4,6-Tribromophenol	7.210	330	38436	9.70	ppm	0.00
Spiked Amount 30.000			Recovery	=	32.33%	
90) Terphenyl-d14	9.711	244	397992	9.87	ppm	0.00
Spiked Amount 10.000			Recovery	=	98.70%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	65915	10.18	ppm	94
3) N-nitrosodimethylamine	1.477	74	90964	9.90	ppm	96
4) Pyridine	1.501	79	171264	10.36	ppm	100
7) Phenol	2.670	94	179267	9.86	ppm	100
8) Aniline	2.743	93	231796	10.02	ppm	98
9) bis(2-chloroethyl)ether	2.769	93	136883	9.93	ppm	97
10) 2-Chlorophenol	2.837	128	147732	9.63	ppm	91
11) 1,3-Dichlorobenzene	2.972	146	178852	10.00	ppm	100
13) 1,4-Dichlorobenzene	3.030	146	180267	9.93	ppm	100
14) Benzyl alcohol	3.106	108	98381	9.98	ppm	97
15) 1,2-Dichlorobenzene	3.164	146	175135	10.10	ppm	99
16) 2-Methylphenol	3.183	107	123043	9.92	ppm	97
17) bis(2-chloroisopropyl)...	3.226	45	286526	9.98	ppm	99
18) 4-Methylphenol	3.317	107	159309	9.69	ppm	100
19) N-Nitroso-di-n-propyla...	3.346	70	109909	9.55	ppm	99
20) Hexachloroethane	3.475	117	67693	9.76	ppm	97
23) Nitrobenzene	3.523	77	173735	9.88	ppm	100
24) Isophorone	3.754	82	334210	9.92	ppm	95
25) 2-Nitrophenol	3.835	139	69035	9.73	ppm	100
26) 2,4-Dimethylphenol	3.849	107	162468	9.97	ppm	100
27) Benzoic acid	3.902	105	74723	8.88	ppm	96
28) bis(2-Chloroethoxy)met...	3.964	93	175670	9.97	ppm	99
29) 3,5-Dimethylphenol	3.988	107	159077	9.05	ppm	89
30) 2,4-Dichlorophenol	4.075	162	136150	9.86	ppm	100
31) 3,4-Dimethylphenol	4.167	107	191207	9.96	ppm	100
32) 1,2,4-Trichlorobenzene	4.176	180	160111	10.15	ppm	98
33) Naphthalene	4.268	128	432811	10.01	ppm	99
34) 4-Chloroaniline	4.311	127	185544	10.07	ppm	99
35) 2,6-Dichlorophenol	4.321	162	130994	10.02	ppm	100
36) Hexachlorobutadiene	4.393	225	104042	9.88	ppm	100

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.832	107	125029	9.54	ppm	100
39)	2-Methylnaphthalene	5.038	142	304959	10.02	ppm	99
40)	1-Methylnaphthalene	5.153	142	265903	9.98	ppm	100
42)	Hexachlorocyclopentadiene	5.216	237	111546	9.69	ppm	98
43)	2,3,5-Trichlorophenol	5.220	196	99382	10.14	ppm	93
44)	2,4,6-Trichlorophenol	5.355	196	101021	9.69	ppm	100
45)	2,4,5-Trichlorophenol	5.389	196	107898	9.84	ppm	100
47)	2,3,4-Trichlorophenol	5.466	196	97362	10.13	ppm	92
48)	Biphenyl	5.582	154	378136	10.13	ppm	100
49)	2-Chloronaphthalene	5.606	162	306309	9.97	ppm	100
50)	2-Nitroaniline	5.716	65	84104	9.71	ppm	98
51)	2,6-Dimethylnaphthalene	5.769	156	266195	10.07	ppm	99
52)	1,4-Dinitrobenzene	5.889	168	35109	9.24	ppm	97
53)	Dimethylphthalate	5.947	163	335476	9.94	ppm	99
54)	1,3-Dinitrobenzene	5.971	168	43557	9.67	ppm	84
55)	2,6-Dinitrotoluene	6.014	165	67449	9.77	ppm	100
56)	1,2-Dinitrobenzene	6.072	168	28363	9.75	ppm	95
57)	Acenaphthylene	6.096	152	478275	9.84	ppm	97
58)	3-Nitroaniline	6.212	138	72590	10.06	ppm	99
59)	Acenaphthene	6.308	153	306337	10.07	ppm	100
60)	2,4-Dinitrophenol	6.332	184	20968	8.85	ppm	95
61)	4-Nitrophenol	6.399	109	45441	9.62	ppm	98
62)	2,4-Dinitrotoluene	6.495	165	88726	9.89	ppm	100
63)	Dibenzofuran	6.519	168	436604	10.10	ppm	99
64)	2,3,5,6-Tetrachlorophenol	6.605	230	67143	9.38	ppm	96
65)	2,3,4,6-Tetrachlorophenol	6.658	232	95767	9.72	ppm	98
66)	2,3,5-Trimethylnaphtha...	6.772	170	246984	9.98	ppm	100
67)	Diethylphthalate	6.809	149	339260	9.92	ppm	100
68)	Fluorene	6.931	166	339996	10.10	ppm	99
69)	4-Chlorophenyl-phenyle...	6.936	204	172024	10.03	ppm	100
70)	4-Nitroaniline	6.945	138	69865	9.41	ppm	93
72)	4,6-Dinitro-2-methylph...	6.983	198	41439	9.57	ppm	91
73)	N-Nitrosodiphenylamine	7.072	169	278207	9.87	ppm	100
74)	Azobenzene	7.124	77	329221	9.96	ppm	100
76)	4-Bromophenyl-phenylether	7.504	248	95585	9.65	ppm	100
77)	Hexachlorobenzene	7.565	284	99183	9.84	ppm	99
78)	Pentachlorophenol	7.787	266	53727	9.32	ppm	100
79)	Dibenzothiophene	7.886	184	508550	9.99	ppm	99
80)	Phenanthrene	8.032	178	514891	9.95	ppm	100
82)	Anthracene	8.089	178	521480	10.00	ppm	100
83)	Carbazole	8.263	167	445140	10.05	ppm	99
84)	Di-n-butylphthalate	8.659	149	537668	10.01	ppm	100
85)	1-Methylphenanthrene	8.697	192	368981	10.05	ppm	99
86)	Fluoranthene	9.306	202	580678	9.96	ppm	100
89)	Pyrene	9.542	202	624119	9.69	ppm	97
91)	Butylbenzylphthalate	10.218	149	206790	9.47	ppm	99
92)	bis(2-ethylhexyl)adipate	10.295	129	175717	9.78	ppm	99
93)	3,3'-Dichlorobenzidine	10.743	252	188298	9.70	ppm	99
94)	Benzo(a)anthracene	10.772	228	567854	9.76	ppm	100
95)	Chrysene	10.811	228	534898	9.94	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.796	149	330326	9.80	ppm	99
98)	Di-n-octylphthalate	11.417	149	526484	9.62	ppm	100
99)	Benzo(b)fluoranthene	11.806	252	490757	9.50	ppm	97
100)	Benzo(k)fluoranthene	11.830	252	523980	10.07	ppm	99
101)	Benzo(e)pyrene	12.086	252	468874	9.84	ppm	99

02-08-16

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.145	252	476447	9.72 ppm	99
103) Perylene	12.237	252	497379	10.11 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.548	276	525166	9.67 ppm	97
105) Dibenzo(a,h)anthracene	13.573	278	432511	9.56 ppm	99
106) Benzo(g,h,i)perylene	13.952	276	448274	9.60 ppm	99

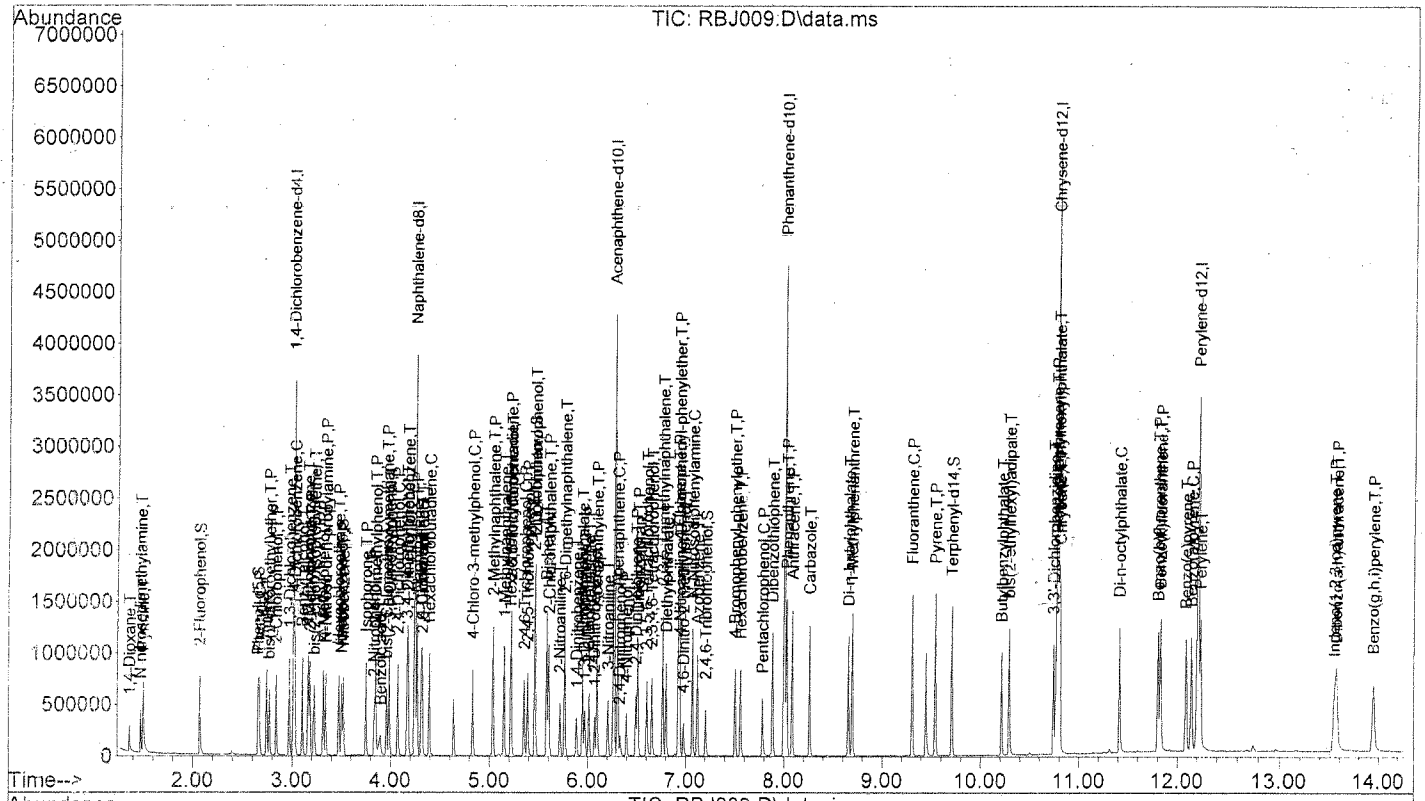
(#) = qualifier out of range (m) = manual integration (+) = signals summed

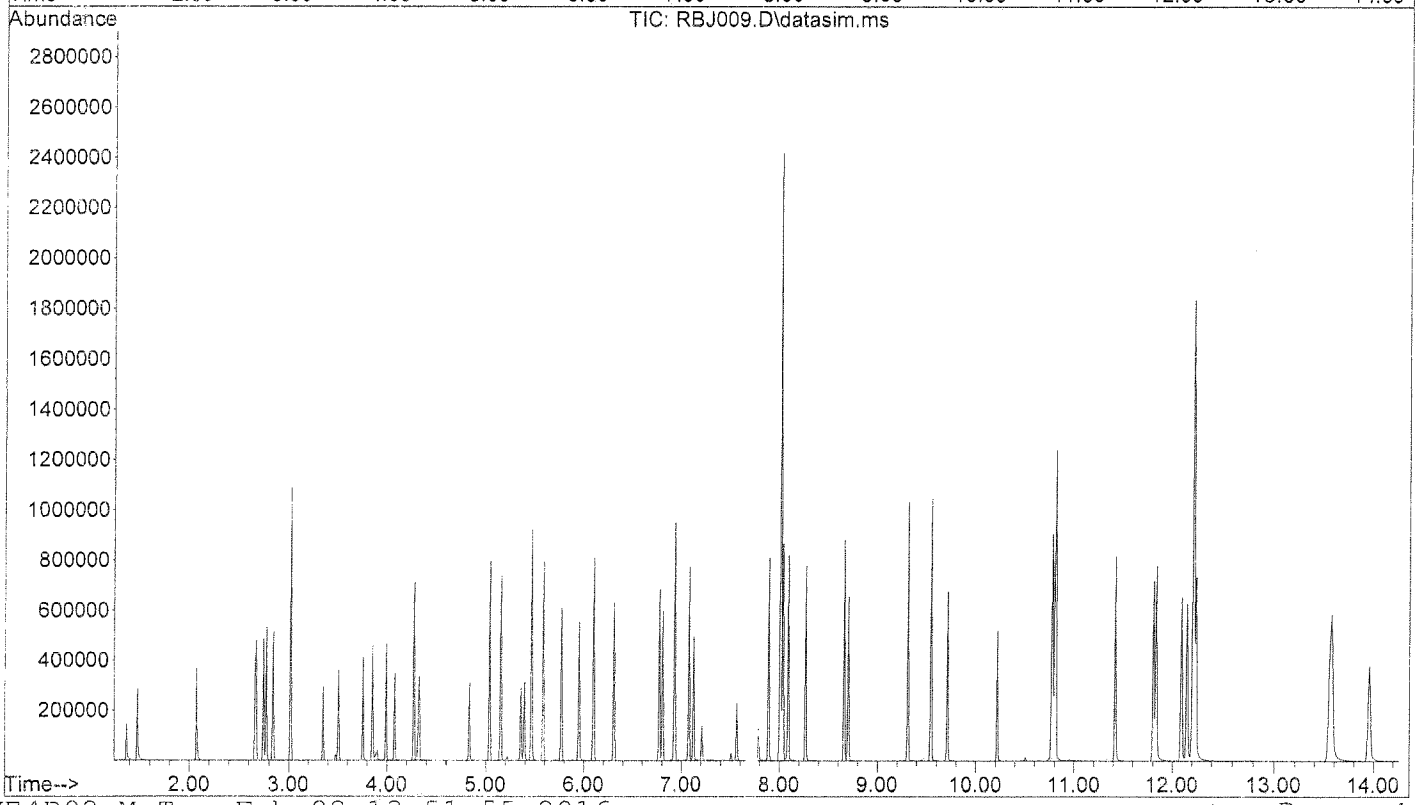
KV 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	428154	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1558094	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	937266	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1665411	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1881471	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1593531	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	283094	20.13	ppm	0.00
Spiked Amount 30.000			Recovery =	67.10%		
6) Phenol-d5	2.659	99	349111	20.10	ppm	0.00
Spiked Amount 30.000			Recovery =	67.00%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.509	82	349734	19.89	ppm	0.00
Spiked Amount 10.000			Recovery =	198.90%		
46) 2-Fluorobiphenyl	5.466	172	754125	20.14	ppm	0.00
Spiked Amount 10.000			Recovery =	201.40%		
75) 2,4,6-Tribromophenol	7.210	330	81476	20.36	ppm	0.00
Spiked Amount 30.000			Recovery =	67.87%		
90) Terphenyl-d14	9.711	244	814806	20.23	ppm	0.00
Spiked Amount 10.000			Recovery =	202.30%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	125790	19.62	ppm	97
3) N-nitrosodimethylamine	1.477	74	184133	20.23	ppm	100
4) Pyridine	1.505	79	344170	21.02	ppm	100
7) Phenol	2.670	94	366939	20.38	ppm	99
8) Aniline	2.743	93	465184	20.31	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	274624	20.13	ppm	97
10) 2-Chlorophenol	2.837	128	300545	19.79	ppm	92
11) 1,3-Dichlorobenzene	2.972	146	355670	20.08	ppm	99
13) 1,4-Dichlorobenzene	3.030	146	365340	20.32	ppm	98
14) Benzyl alcohol	3.106	108	201878	20.68	ppm	97
15) 1,2-Dichlorobenzene	3.164	146	345956	20.15	ppm	100
16) 2-Methylphenol	3.183	107	249283	20.29	ppm	98
17) bis(2-chloroisopropyl)...	3.226	45	577025	20.31	ppm	100
18) 4-Methylphenol	3.322	107	328221	20.16	ppm	99
19) N-Nitroso-di-n-propyla...	3.351	70	226081	19.85	ppm	89
20) Hexachloroethane	3.475	117	140037	20.39	ppm	99
23) Nitrobenzene	3.528	77	356221	20.18	ppm	99
24) Isophorone	3.758	82	673516	19.91	ppm	96
25) 2-Nitrophenol	3.840	139	146825	20.61	ppm	100
26) 2,4-Dimethylphenol	3.854	107	328997	20.11	ppm	100
27) Benzoic acid	3.926	105	189390	19.45	ppm	100
28) bis(2-Chloroethoxy)met...	3.964	93	355943	20.12	ppm	100
29) 3,5-Dimethylphenol	3.993	107	367404	20.82	ppm	98
30) 2,4-Dichlorophenol	4.075	162	280702	20.25	ppm	99
31) 3,4-Dimethylphenol	4.171	107	388185	20.15	ppm	100
32) 1,2,4-Trichlorobenzene	4.176	180	318145	20.10	ppm	99
33) Naphthalene	4.268	128	865405	19.93	ppm	99
34) 4-Chloroaniline	4.311	127	375483	20.31	ppm	100
35) 2,6-Dichlorophenol	4.321	162	265237	20.22	ppm	100
36) Hexachlorobutadiene	4.393	225	209089	19.77	ppm	100

TM 02-08-16

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.837	107	267867	20.37	ppm	99
39) 2-Methylnaphthalene	5.038	142	611361	20.01	ppm	100
40) 1-Methylnaphthalene	5.153	142	539702	20.18	ppm	100
42) Hexachlorocyclopentadiene	5.216	237	237957	20.22	ppm	99
43) 2,3,5-Trichlorophenol	5.225	196	192179	19.18	ppm	98
44) 2,4,6-Trichlorophenol	5.355	196	217047	20.36	ppm	100
45) 2,4,5-Trichlorophenol	5.389	196	222289	19.83	ppm	97
47) 2,3,4-Trichlorophenol	5.466	196	198111	20.16	ppm	99
48) Biphenyl	5.582	154	764093	20.02	ppm	100
49) 2-Chloronaphthalene	5.606	162	618208	19.69	ppm	100
50) 2-Nitroaniline	5.721	65	181708	20.52	ppm	99
51) 2,6-Dimethylnaphthalene	5.769	156	538153	19.91	ppm	100
52) 1,4-Dinitrobenzene	5.889	168	79245	20.39	ppm	100
53) Dimethylphthalate	5.952	163	702261	20.35	ppm	100
54) 1,3-Dinitrobenzene	5.976	168	95871	20.82	ppm	100
55) 2,6-Dinitrotoluene	6.019	165	142468	20.19	ppm	98
56) 1,2-Dinitrobenzene	6.077	168	60772	20.44	ppm	96
57) Acenaphthylene	6.101	152	977048	19.65	ppm	97
58) 3-Nitroaniline	6.212	138	149163	20.21	ppm	100
59) Acenaphthene	6.312	153	621920	19.99	ppm	100
60) 2,4-Dinitrophenol	6.336	184	57236	19.12	ppm	98
61) 4-Nitrophenol	6.403	109	99934	20.68	ppm	99
62) 2,4-Dinitrotoluene	6.499	165	186930	20.37	ppm	98
63) Dibenzofuran	6.518	168	883647	20.00	ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.610	230	149307	20.40	ppm	100
65) 2,3,4,6-Tetrachlorophenol	6.657	232	201661	20.02	ppm	99
66) 2,3,5-Trimethylnaphtha...	6.771	170	512432	20.26	ppm	98
67) Diethylphthalate	6.809	149	703583	20.12	ppm	100
68) Fluorene	6.931	166	692140	20.11	ppm	100
69) 4-Chlorophenyl-phenyle...	6.940	204	353455	20.16	ppm	100
70) 4-Nitroaniline	6.950	138	146240	19.26	ppm	92
72) 4,6-Dinitro-2-methylph...	6.987	198	99852	19.79	ppm	99
73) N-Nitrosodiphenylamine	7.077	169	580914	20.41	ppm	99
74) Azobenzene	7.124	77	681791	20.42	ppm	99
76) 4-Bromophenyl-phenylether	7.509	248	202916	20.29	ppm	97
77) Hexachlorobenzene	7.565	284	204970	20.14	ppm	99
78) Pentachlorophenol	7.787	266	120819	20.77	ppm	97
79) Dibenzothiophene	7.891	184	1042782	20.30	ppm	100
80) Phenanthrene	8.032	178	1058636	20.26	ppm	100
82) Anthracene	8.089	178	1062373	20.19	ppm	100
83) Carbazole	8.267	167	904501	20.23	ppm	100
84) Di-n-butylphthalate	8.659	149	1109535	20.47	ppm	100
85) 1-Methylphenanthrene	8.702	192	749657	20.23	ppm	100
86) Fluoranthene	9.311	202	1198440	20.36	ppm	100
89) Pyrene	9.547	202	1270820	19.75	ppm	98
91) Butylbenzylphthalate	10.218	149	461082	21.14	ppm	99
92) bis(2-ethylhexyl)adipate	10.299	129	379082	21.13	ppm	99
93) 3,3'-Dichlorobenzidine	10.747	252	393987	20.33	ppm	100
94) Benzo(a)anthracene	10.777	228	1161369	19.98	ppm	99
95) Chrysene	10.811	228	1077310	20.05	ppm	100
96) bis(2-Ethylhexyl)phtha...	10.796	149	698693	20.75	ppm	100
98) Di-n-octylphthalate	11.422	149	1148944	21.23	ppm	100
99) Benzo(b)fluoranthene	11.806	252	1020241	19.96	ppm	98
100) Benzo(k)fluoranthene	11.835	252	1062346	20.63	ppm	98
101) Benzo(e)pyrene	12.091	252	954148	20.23	ppm	100

PM 02-08-16

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.150	252	980871	20.22 ppm	100
103) Perylene	12.242	252	992878	20.39 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.558	276	1092772	20.34 ppm	99
105) Dibenzo(a,h)anthracene	13.578	278	908152	20.29 ppm	96
106) Benzo(g,h,i)perylene	13.961	276	922591	19.98 ppm	99

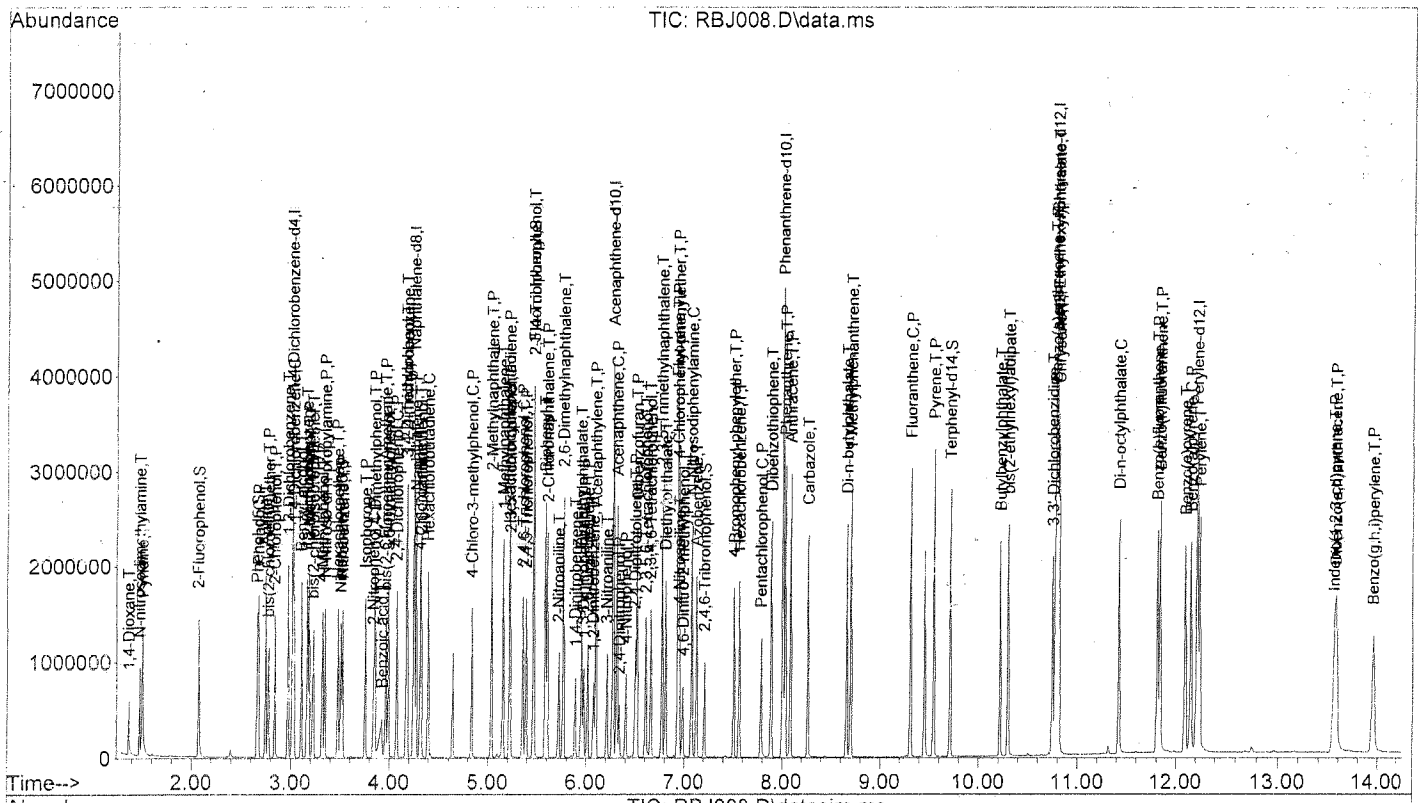
(#) = qualifier out of range (m) = manual integration (+) = signals summed

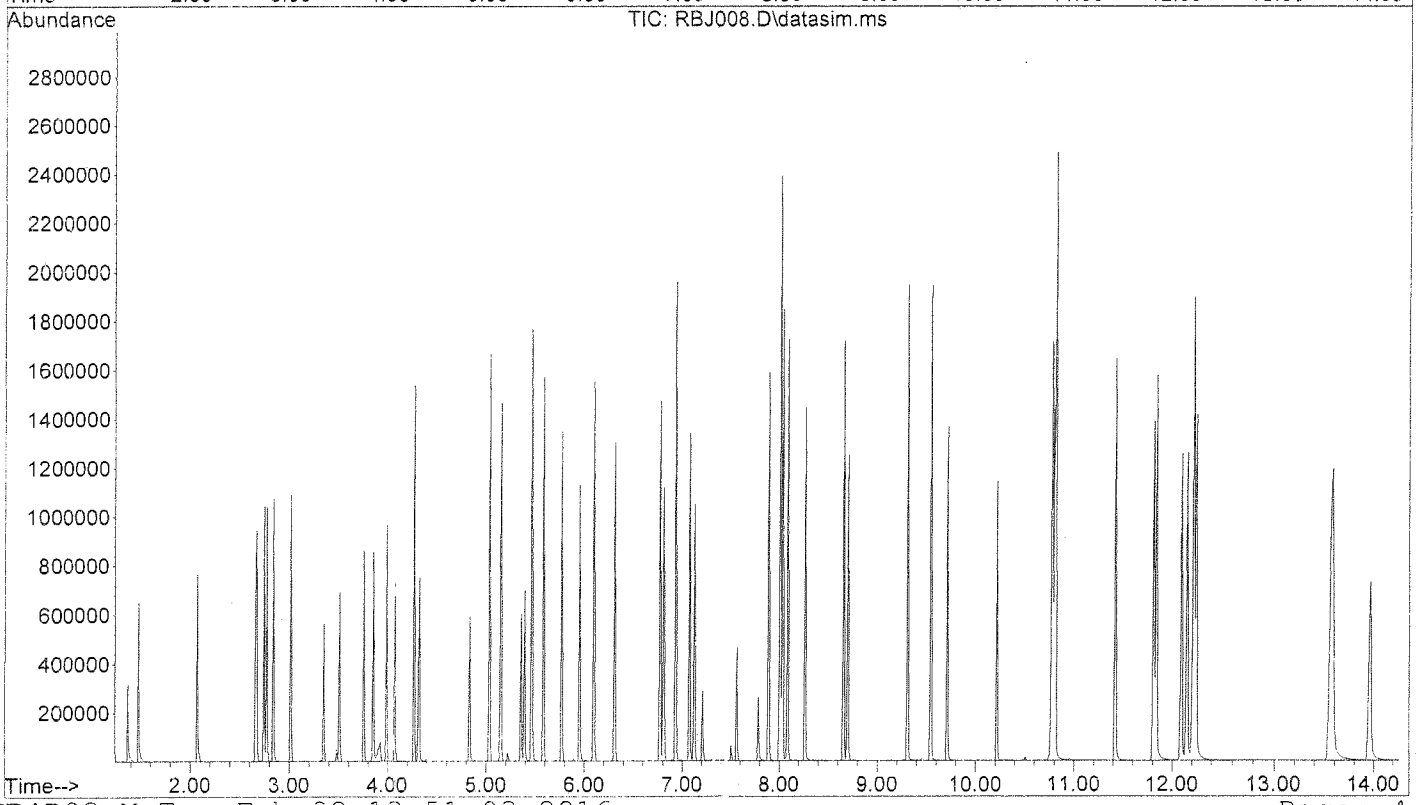
KV 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

458

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	424119	40.00	ppm	0.00
21) Naphthalene-d8	4.248	136	1535126	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	929909	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1694673	40.00	ppm	0.00
87) Chrysene-d12	10.791	240	1850796	40.00	ppm	0.00
97) Perylene-d12	12.218	264	1601653	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	354826	25.47	ppm	0.00
Spiked Amount 30.000			Recovery =	84.90%		
6) Phenol-d5	2.659	99	444707	25.85	ppm	0.00
Spiked Amount 30.000			Recovery =	86.17%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.509	82	443426	25.60	ppm	0.00
Spiked Amount 10.000			Recovery =	256.00%		
46) 2-Fluorobiphenyl	5.466	172	926819	24.95	ppm	0.00
Spiked Amount 10.000			Recovery =	249.50%		
75) 2,4,6-Tribromophenol	7.210	330	105926	26.01	ppm	0.00
Spiked Amount 30.000			Recovery =	86.70%		
90) Terphenyl-d14	9.716	244	1002718	25.31	ppm	0.00
Spiked Amount 10.000			Recovery =	253.10%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	154397	24.31	ppm	100
3) N-nitrosodimethylamine	1.476	74	231180	25.65	ppm	100
4) Pyridine	1.505	79	431323	26.60	ppm	100
7) Phenol	2.670	94	455147	25.53	ppm	100
8) Aniline	2.743	93	579830	25.56	ppm	100
9) bis(2-chloroethyl)ether	2.774	93	349605	25.87	ppm	100
10) 2-Chlorophenol	2.836	128	374480	24.89	ppm	100
11) 1,3-Dichlorobenzene	2.972	146	446663	25.46	ppm	100
13) 1,4-Dichlorobenzene	3.029	146	451681	25.36	ppm	100
14) Benzyl alcohol	3.111	108	247443	25.59	ppm	100
15) 1,2-Dichlorobenzene	3.164	146	434934	25.57	ppm	100
16) 2-Methylphenol	3.183	107	309070	25.40	ppm	100
17) bis(2-chloroisopropyl)...	3.231	45	713143	25.34	ppm	100
18) 4-Methylphenol	3.322	107	410016	25.43	ppm	100
19) N-Nitroso-di-n-propyla...	3.351	70	282588	25.04	ppm	100
20) Hexachloroethane	3.475	117	175072	25.73	ppm	100
23) Nitrobenzene	3.528	77	443600	25.51	ppm	100
24) Isophorone	3.758	82	848649	25.47	ppm	100
25) 2-Nitrophenol	3.840	139	187889	26.77	ppm	100
26) 2,4-Dimethylphenol	3.854	107	412636	25.60	ppm	100
27) Benzoic acid	3.936	105	244315	24.87	ppm	100
28) bis(2-Chloroethoxy)met...	3.964	93	443423	25.44	ppm	100
29) 3,5-Dimethylphenol	3.993	107	461551	26.55	ppm	100
30) 2,4-Dichlorophenol	4.080	162	350246	25.64	ppm	100
31) 3,4-Dimethylphenol	4.171	107	48[illegible]984	25.55	ppm	100
32) 1,2,4-Trichlorobenzene	4.181	180	39[illegible]350	25.09	ppm	100
33) Naphthalene	4.273	128	1082083	25.30	ppm	100
34) 4-Chloroaniline	4.316	127	466212	25.59	ppm	100
35) 2,6-Dichlorophenol	4.326	162	330379	25.56	ppm	100
36) Hexachlorobutadiene	4.393	225	264825	25.42	ppm	100

02-08-16

451

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.837	107	332581	25.67 ppm	100
39) 2-Methylnaphthalene	5.038	142	763316	25.36 ppm	100
40) 1-Methylnaphthalene	5.153	142	667130	25.32 ppm	100
42) Hexachlorocyclopentadiene	5.220	237	296837	25.43 ppm	100
43) 2,3,5-Trichlorophenol	5.225	196	259286	26.08 ppm	100
44) 2,4,6-Trichlorophenol	5.355	196	269089	25.44 ppm	100
45) 2,4,5-Trichlorophenol	5.393	196	286388	25.75 ppm	100
47) 2,3,4-Trichlorophenol	5.471	196	245575	25.19 ppm	100
48) Biphenyl	5.586	154	951236	25.12 ppm	100
49) 2-Chloronaphthalene	5.605	162	765314	24.57 ppm	100
50) 2-Nitroaniline	5.720	65	229569	26.13 ppm	100
51) 2,6-Dimethylnaphthalene	5.773	156	678941	25.31 ppm	100
52) 1,4-Dinitrobenzene	5.889	168	102809	26.66 ppm	100
53) Dimethylphthalate	5.956	163	859276	25.10 ppm	100
54) 1,3-Dinitrobenzene	5.980	168	121237	26.54 ppm	100
55) 2,6-Dinitrotoluene	6.019	165	179361	25.62 ppm	100
56) 1,2-Dinitrobenzene	6.082	168	78075	26.47 ppm	100
57) Acenaphthylene	6.101	152	1321731	26.80 ppm	100
58) 3-Nitroaniline	6.216	138	187414	25.59 ppm	100
59) Acenaphthene	6.312	153	777060	25.17 ppm	100
60) 2,4-Dinitrophenol	6.341	184	76766	24.89 ppm	100
61) 4-Nitrophenol	6.408	109	125188	26.11 ppm	100
62) 2,4-Dinitrotoluene	6.504	165	239877	26.35 ppm	100
63) Dibenzofuran	6.518	168	1100450	25.10 ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.609	230	190633	26.25 ppm	100
65) 2,3,4,6-Tetrachlorophenol	6.662	232	254771	25.50 ppm	100
66) 2,3,5-Trimethylnaphtha...	6.776	170	632123	25.19 ppm	100
67) Diethylphthalate	6.813	149	882992	25.45 ppm	100
68) Fluorene	6.935	166	860095	25.19 ppm	100
69) 4-Chlorophenyl-phenyle...	6.940	204	436210	25.08 ppm	100
70) 4-Nitroaniline	6.954	138	201632	26.77 ppm	100
72) 4,6-Dinitro-2-methylph...	6.987	198	132589	25.16 ppm	100
73) N-Nitrosodiphenylamine	7.077	169	726507	25.09 ppm	100
74) Azobenzene	7.129	77	847806	24.96 ppm	100
76) 4-Bromophenyl-phenylether	7.508	248	252950	24.86 ppm	100
77) Hexachlorobenzene	7.565	284	256084	24.73 ppm	100
78) Pentachlorophenol	7.787	266	157240	26.56 ppm	100
79) Dibenzothiophene	7.891	184	1303111	24.93 ppm	100
80) Phenanthrene	8.032	178	1328491	24.99 ppm	100
82) Anthracene	8.089	178	1355084	25.31 ppm	100
83) Carbazole	8.267	167	1138959	25.03 ppm	100
84) Di-n-butylphthalate	8.659	149	1424955	25.83 ppm	100
85) 1-Methylphenanthrene	8.702	192	950870	25.22 ppm	100
86) Fluoranthene	9.311	202	1501837	25.07 ppm	100
89) Pyrene	9.547	202	1679485	26.54 ppm	100
91) Butylbenzylphthalate	10.218	149	577299	26.91 ppm	100
92) bis(2-ethylhexyl)adipate	10.299	129	471027	26.69 ppm	100
93) 3,3'-Dichlorobenzidine	10.748	252	494507	25.94 ppm	100
94) Benzo(a)anthracene	10.777	228	1445279	25.28 ppm	100
95) Chrysene	10.816	228	1325857	25.08 ppm	100
96) bis(2-Ethylhexyl)phtha..	10.801	149	865260	26.12 ppm	100
98) Di-n-octylphthalate	11.422	149	1447152	26.60 ppm	100
99) Benzo(b)fluoranthene	11.811	252	1342364	26.13 ppm	100
100) Benzo(k)fluoranthene	11.840	252	1268363	24.50 ppm	100
101) Benzo(e)pyrene	12.096	252	1206708	25.46 ppm	100

RU 02-08-16

152

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	12.155	252	1235377	25.33	ppm	100
103) Perylene	12.247	252	1233135	25.20	ppm	100
104) Indeno(1,2,3-cd)pyrene	13.563	276	1386533	25.68	ppm	100
105) Dibenzo(a,h)anthracene	13.587	278	1159025	25.76	ppm	100
106) Benzo(g,h,i)perylene	13.971	276	1177656	25.37	ppm	100

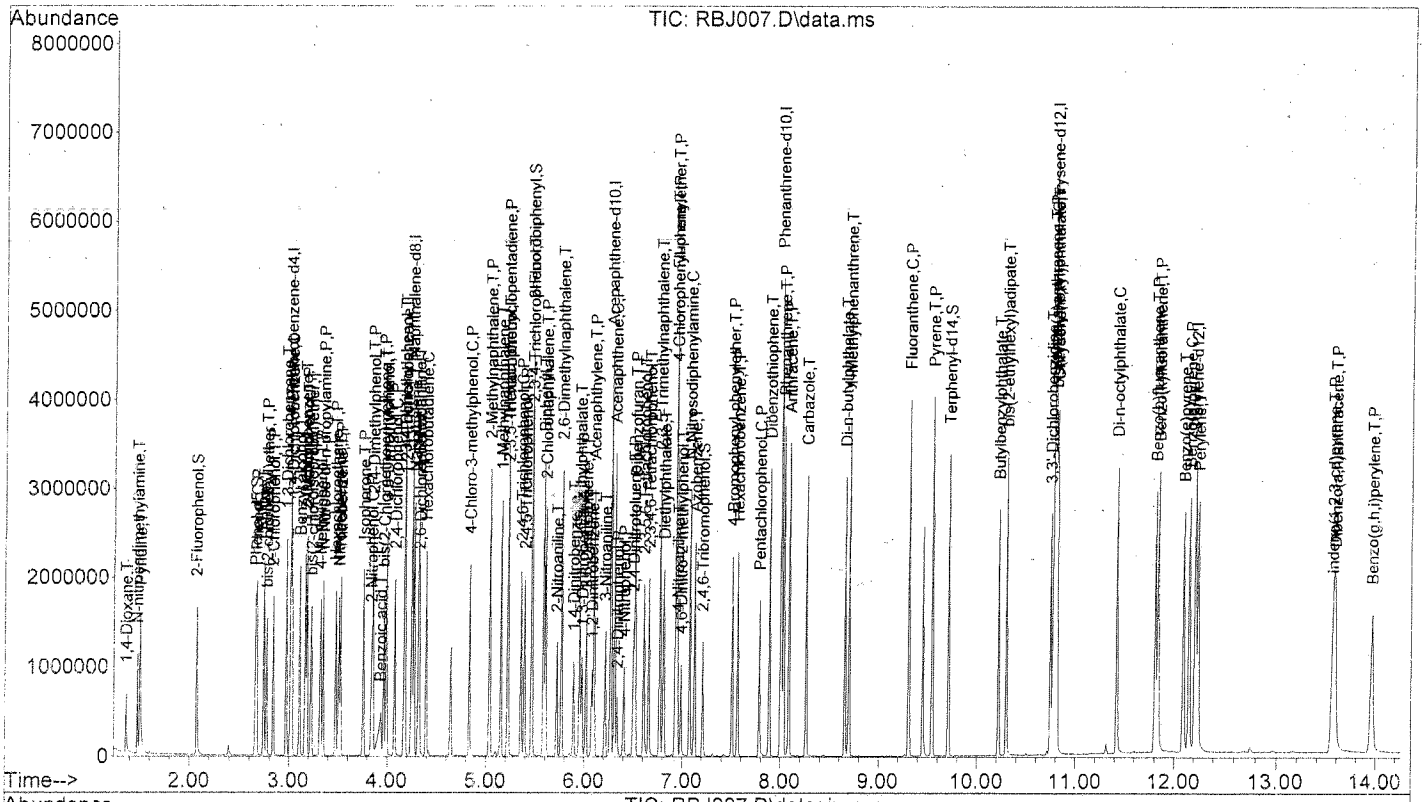
(#) = qualifier out of range (m) = manual integration (+) = signals summed

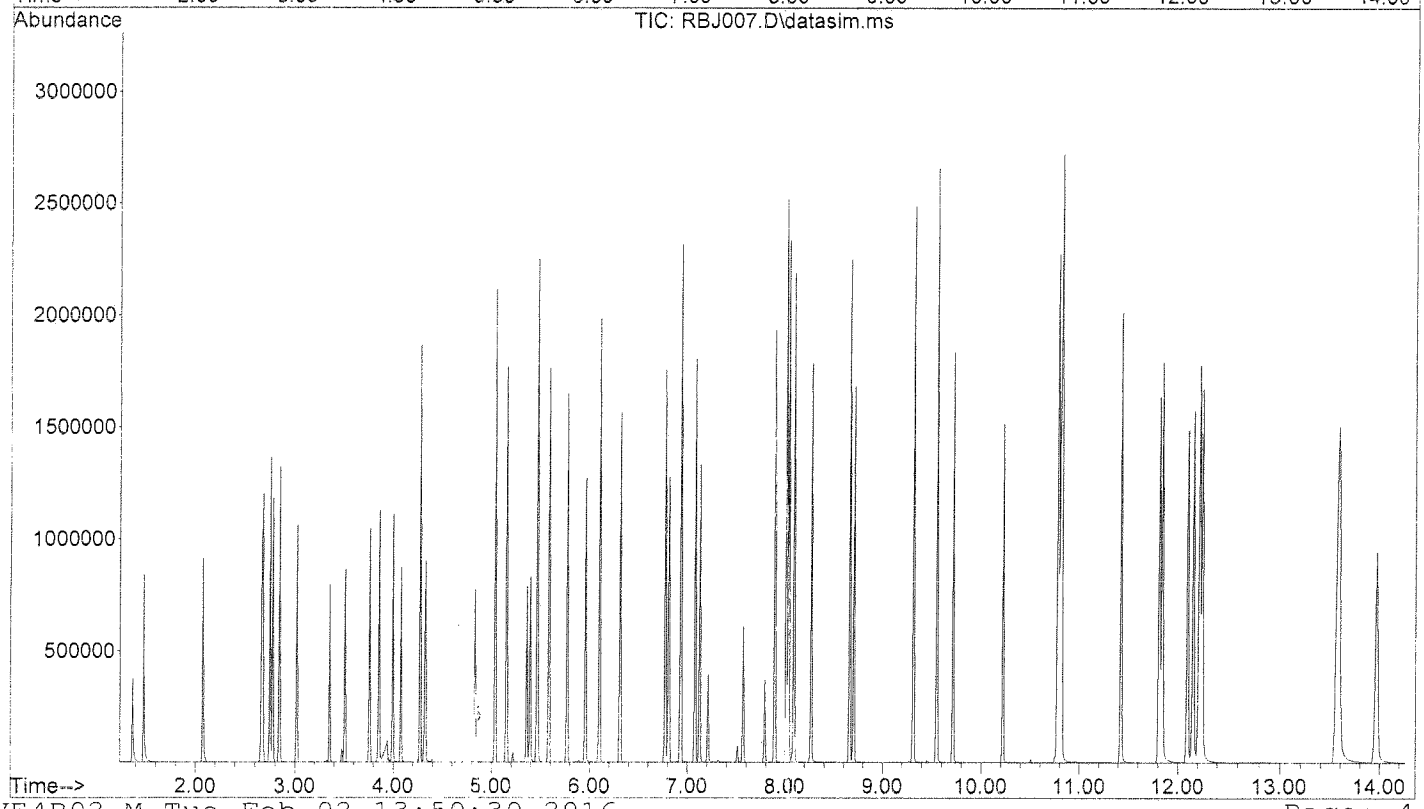
pu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00





RW 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	455852	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1618791	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	966999	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1728695	40.00	ppm	0.00
87) Chrysene-d12	10.791	240	1903162	40.00	ppm	0.00
97) Perylene-d12	12.217	264	1635198	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.075	112	597502	39.91	ppm	0.00
Spiked Amount 30.000			Recovery	=	133.03%	
6) Phenol-d5	2.664	99	736322	39.82	ppm	0.00
Spiked Amount 30.000			Recovery	=	132.73%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.509	82	740214	40.52	ppm	0.00
Spiked Amount 10.000			Recovery	=	405.20%	
46) 2-Fluorobiphenyl	5.471	172	1511033	39.11	ppm	0.00
Spiked Amount 10.000			Recovery	=	391.10%	
75) 2,4,6-Tribromophenol	7.214	330	176721	42.54	ppm	0.00
Spiked Amount 30.000			Recovery	=	141.80%	
90) Terphenyl-d14	9.716	244	1641579	40.29	ppm	0.00
Spiked Amount 10.000			Recovery	=	402.90%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	258378	37.85	ppm	97
3) N-nitrosodimethylamine	1.477	74	382077	39.43	ppm	100
4) Pyridine	1.500	79	723731	41.53	ppm	100
7) Phenol	2.675	94	754581	39.37	ppm	100
8) Aniline	2.748	93	954883	39.16	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	573719	39.50	ppm	99
10) 2-Chlorophenol	2.842	128	675096	41.75	ppm	94
11) 1,3-Dichlorobenzene	2.972	146	750710	39.82	ppm	100
13) 1,4-Dichlorobenzene	3.029	146	758428	39.61	ppm	99
14) Benzyl alcohol	3.111	108	412504	39.68	ppm	100
15) 1,2-Dichlorobenzene	3.164	146	714240	39.07	ppm	99
16) 2-Methylphenol	3.188	107	514968	39.37	ppm	99
17) bis(2-chloroisopropyl)...	3.231	45	1179656	38.99	ppm	100
18) 4-Methylphenol	3.327	107	741045	42.76	ppm	93
19) N-Nitroso-di-n-propyla...	3.356	70	525189	43.30	ppm	100
20) Hexachloroethane	3.480	117	291976	39.93	ppm	97
23) Nitrobenzene	3.533	77	734167	40.03	ppm	99
24) Isophorone	3.763	82	1431467	40.74	ppm	99
25) 2-Nitrophenol	3.840	139	313641	42.38	ppm	99
26) 2,4-Dimethylphenol	3.859	107	681106	40.07	ppm	98
27) Benzoic acid	3.964	105	432819	40.45	ppm	99
28) bis(2-Chloroethoxy)met...	3.969	93	725913	39.50	ppm	99
29) 3,5-Dimethylphenol	3.998	107	779383	42.51	ppm	97
30) 2,4-Dichlorophenol	4.080	162	582172	40.42	ppm	100
31) 3,4-Dimethylphenol	4.176	107	792777	39.61	ppm	99
32) 1,2,4-Trichlorobenzene	4.181	180	647830	39.38	ppm	99
33) Naphthalene	4.273	128	1775939	39.37	ppm	100
34) 4-Chloroaniline	4.321	127	759311	39.53	ppm	100
35) 2,6-Dichlorophenol	4.326	162	546132	40.07	ppm	99
36) Hexachlorobutadiene	4.398	225	444406	40.45	ppm	99

KU 02-08-16

405

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.837	107	565737	41.40 ppm	99
39) 2-Methylnaphthalene	5.043	142	1247141	39.30 ppm	100
40) 1-Methylnaphthalene	5.153	142	1094524	39.39 ppm	100
42) Hexachlorocyclopentadiene	5.220	237	507703	41.82 ppm	100
43) 2,3,5-Trichlorophenol	5.225	196	445511	43.09 ppm	92
44) 2,4,6-Trichlorophenol	5.360	196	454187	41.30 ppm	100
45) 2,4,5-Trichlorophenol	5.394	196	479889	41.49 ppm	99
47) 2,3,4-Trichlorophenol	5.471	196	406310	40.08 ppm	98
48) Biphenyl	5.586	154	1540616	39.12 ppm	100
49) 2-Chloronaphthalene	5.610	162	1248171	38.53 ppm	100
50) 2-Nitroaniline	5.725	65	382441	41.86 ppm	100
51) 2,6-Dimethylnaphthalene	5.773	156	1103888	39.58 ppm	100
52) 1,4-Dinitrobenzene	5.894	168	175498	43.76 ppm	98
53) Dimethylphthalate	5.961	163	1424930	40.02 ppm	100
54) 1,3-Dinitrobenzene	5.985	168	201145	42.34 ppm	99
55) 2,6-Dinitrotoluene	6.024	165	298897	41.05 ppm	97
56) 1,2-Dinitrobenzene	6.087	168	126747	41.32 ppm	92
57) Acenaphthylene	6.106	152	1965201	38.31 ppm	96
58) 3-Nitroaniline	6.221	138	310362	40.76 ppm	96
59) Acenaphthene	6.317	153	1272674	39.65 ppm	100
60) 2,4-Dinitrophenol	6.346	184	137386	40.89 ppm	96
61) 4-Nitrophenol	6.413	109	209011	41.92 ppm	99
62) 2,4-Dinitrotoluene	6.509	165	392257	41.43 ppm	99
63) Dibenzofuran	6.523	168	1802631	39.54 ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.609	230	323981	42.90 ppm	99
65) 2,3,4,6-Tetrachlorophenol	6.662	232	433866	41.76 ppm	100
66) 2,3,5-Trimethylnaphtha...	6.776	170	1039615	39.83 ppm	98
67) Diethylphthalate	6.814	149	1438543	39.88 ppm	100
68) Fluorene	6.935	166	1397315	39.36 ppm	99
69) 4-Chlorophenyl-phenyle...	6.940	204	716025	39.59 ppm	99
70) 4-Nitroaniline	6.959	138	330600	42.21 ppm	99
72) 4,6-Dinitro-2-methylph...	6.996	198	222458	39.97 ppm	96
73) N-Nitrosodiphenylamine	7.082	169	1179136	39.92 ppm	100
74) Azobenzene	7.129	77	1375496	39.69 ppm	100
76) 4-Bromophenyl-phenylether	7.508	248	414926	39.98 ppm	99
77) Hexachlorobenzene	7.570	284	425171	40.26 ppm	98
78) Pentachlorophenol	7.792	266	265467	43.96 ppm	99
79) Dibenzothiophene	7.896	184	2087183	39.14 ppm	96
80) Phenanthrene	8.037	178	2141125	39.48 ppm	100
82) Anthracene	8.093	178	2171274	39.75 ppm	100
83) Carbazole	8.267	167	1811495	39.03 ppm	99
84) Di-n-butylphthalate	8.663	149	2265847	40.26 ppm	100
85) 1-Methylphenanthrene	8.707	192	1510806	39.28 ppm	100
86) Fluoranthene	9.316	202	2417949	39.56 ppm	100
89) Pyrene	9.552	202	2647993	40.69 ppm	100
91) Butylbenzylphthalate	10.222	149	956176	43.34 ppm	100
92) bis(2-ethylhexyl)adipate	10.299	129	770126	42.44 ppm	100
93) 3,3'-Dichlorobenzidine	10.752	252	815601	41.60 ppm	100
94) Benzo(a)anthracene	10.781	228	2375285	40.40 ppm	100
95) Chrysene	10.820	228	2149749	39.55 ppm	99
96) bis(2-Ethylhexyl)phtha...	10.801	149	1418818	41.65 ppm	100
98) Di-n-octylphthalate	11.422	149	2402172	43.25 ppm	100
99) Benzo(b)fluoranthene	11.816	252	2084476	39.75 ppm	98
100) Benzo(k)fluoranthene	11.845	252	2187101	41.39 ppm	98
101) Benzo(e)pyrene	12.101	252	1952148	40.34 ppm	99

KVu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.159	252	2040196	40.98 ppm	99
103) Perylene	12.251	252	1985264	39.73 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.573	276	2290053	41.54 ppm	100
105) Dibenzo(a,h)anthracene	13.597	278	1906773	41.51 ppm	97
106) Benzo(g,h,i)perylene	13.980	276	1937273	40.88 ppm	99

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

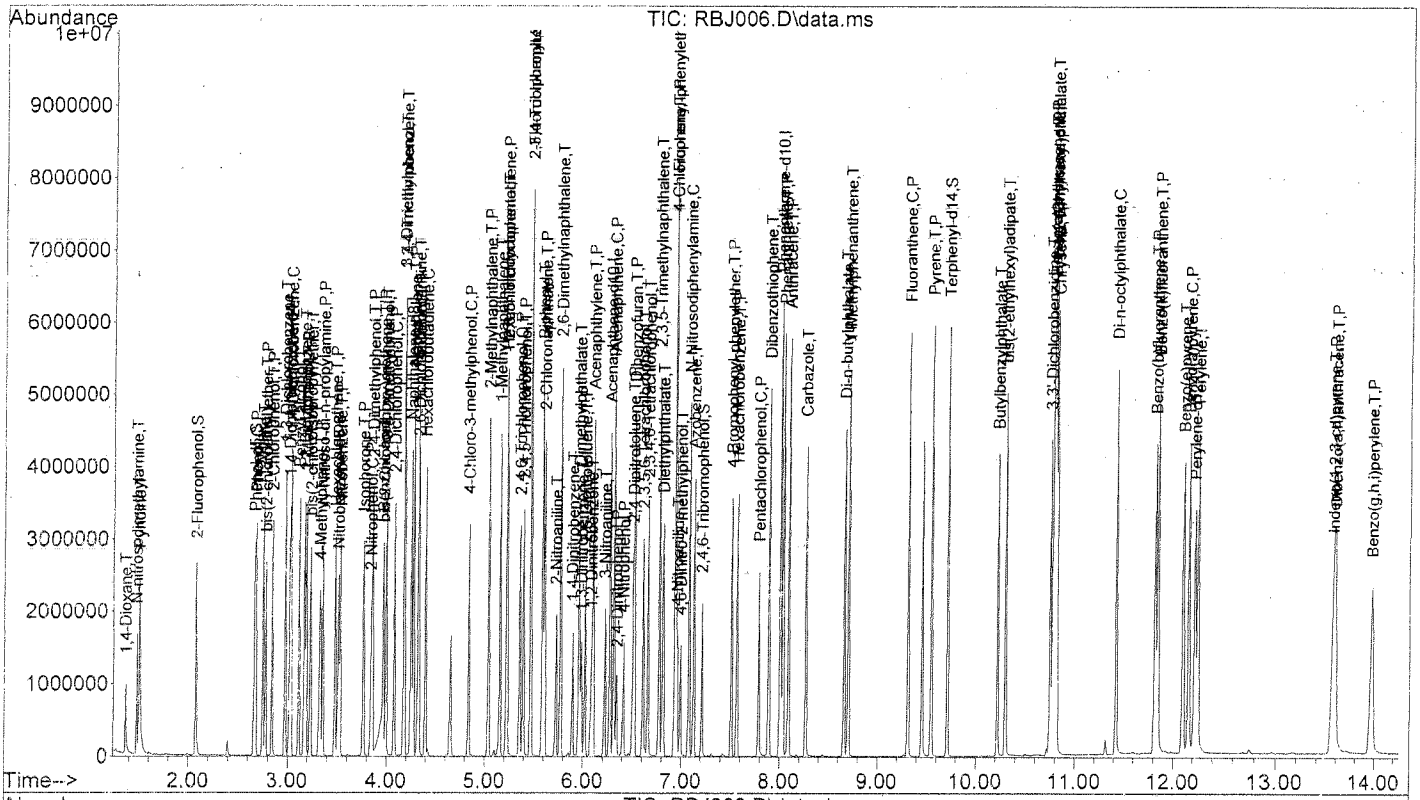
ru 02-08-16

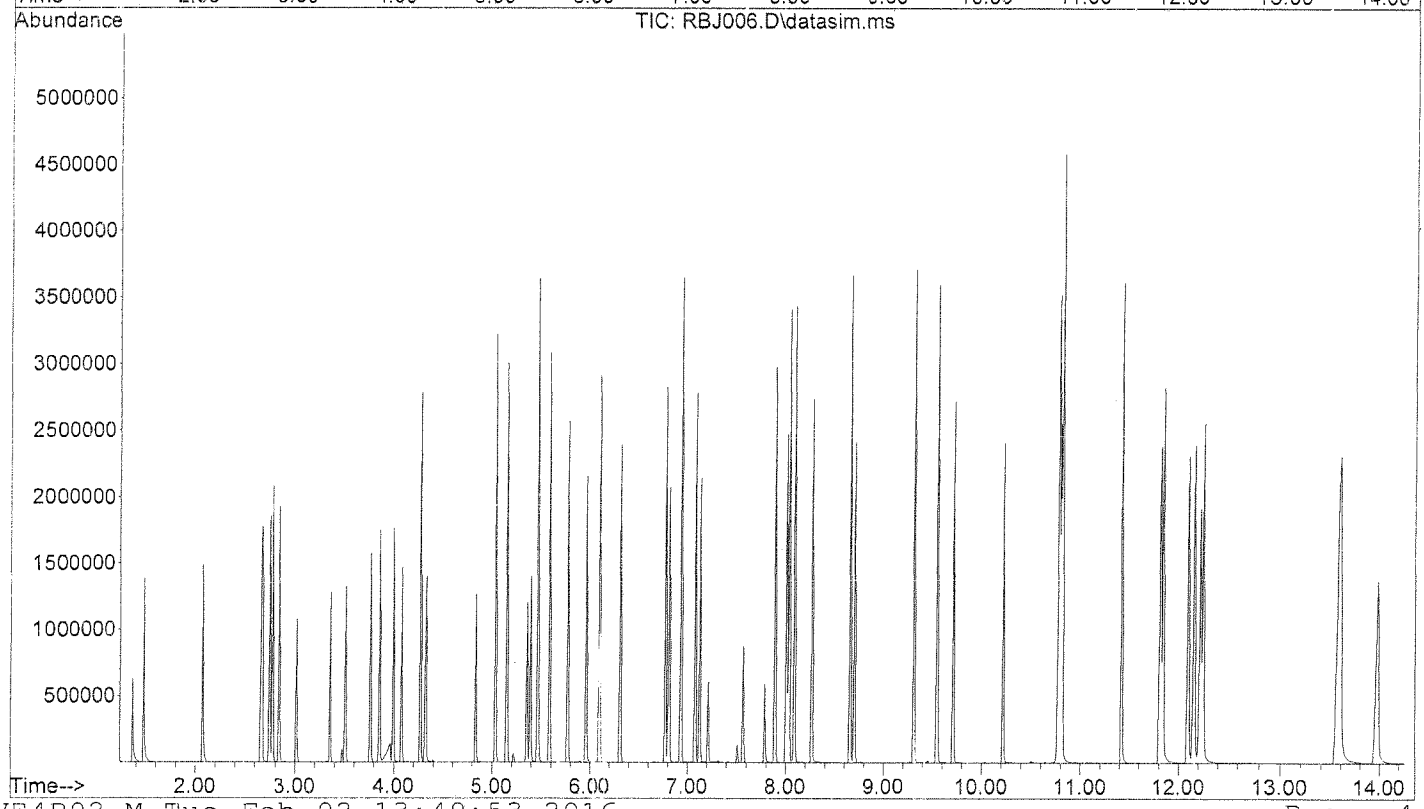
HST

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16 458

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	438355	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1557201	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	920177	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1669203	40.00	ppm	0.00
87) Chrysene-d12	10.791	240	1936700	40.00	ppm	0.00
97) Perylene-d12	12.218	264	1696912	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.075	112	718535	49.91	ppm	0.00
Spiked Amount 30.000			Recovery	=	166.37%	
6) Phenol-d5	2.665	99	886063	49.83	ppm	0.00
Spiked Amount 30.000			Recovery	=	166.10%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.514	82	877327	49.93	ppm	0.00
Spiked Amount 10.000			Recovery	=	499.30%	
46) 2-Fluorobiphenyl	5.471	172	1790042	48.69	ppm	0.00
Spiked Amount 10.000			Recovery	=	486.90%	
75) 2,4,6-Tribromophenol	7.214	330	210341	52.43	ppm	0.00
Spiked Amount 30.000			Recovery	=	174.77%	
90) Terphenyl-d14	9.716	244	2027883	48.91	ppm	0.00
Spiked Amount 10.000			Recovery	=	489.10%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	314172	47.86	ppm	97
3) N-nitrosodimethylamine	1.477	74	464848	49.89	ppm	99
4) Pyridine	1.500	79	862577	51.47	ppm	99
7) Phenol	2.675	94	904804	49.10	ppm	100
8) Aniline	2.748	93	1133572	48.34	ppm	100
9) bis(2-chloroethyl)ether	2.774	93	677686	48.52	ppm	99
10) 2-Chlorophenol	2.842	128	814683	52.39	ppm	91
11) 1,3-Dichlorobenzene	2.972	146	886416	48.89	ppm	100
13) 1,4-Dichlorobenzene	3.034	146	899802	48.87	ppm	99
14) Benzyl alcohol	3.116	108	492274	49.25	ppm	99
15) 1,2-Dichlorobenzene	3.169	146	851391	48.43	ppm	100
16) 2-Methylphenol	3.188	107	612392	48.69	ppm	98
17) bis(2-chloroisopropyl)...	3.231	45	1386911	47.67	ppm	99
18) 4-Methylphenol	3.322	107	814882	48.89	ppm	100
19) N-Nitroso-di-n-propyla...	3.360	70	605868	51.95	ppm	97
20) Hexachloroethane	3.480	117	349638	49.72	ppm	97
23) Nitrobenzene	3.533	77	865261	49.04	ppm	99
24) Isophorone	3.768	82	1634116	48.34	ppm	99
25) 2-Nitrophenol	3.845	139	357386	50.20	ppm	99
26) 2,4-Dimethylphenol	3.859	107	798601	48.84	ppm	98
27) Benzoic acid	3.974	105	514321	49.51	ppm	100
28) bis(2-Chloroethoxy)met...	3.969	93	852190	48.21	ppm	99
29) 3,5-Dimethylphenol	3.998	107	891313	50.54	ppm	98
30) 2,4-Dichlorophenol	4.080	162	690029	49.80	ppm	99
31) 3,4-Dimethylphenol	4.181	107	936836	48.66	ppm	100
32) 1,2,4-Trichlorobenzene	4.181	180	761823	48.15	ppm	99
33) Naphthalene	4.273	128	2104347	48.50	ppm	100
34) 4-Chloroaniline	4.321	127	896667	48.52	ppm	100
35) 2,6-Dichlorophenol	4.331	162	640786	48.88	ppm	100
36) Hexachlorobutadiene	4.398	225	529942	50.14	ppm	100

TM 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.842	107	663448	50.47	ppm		99
39)	2-Methylnaphthalene	5.043	142	1467243	48.06	ppm		100
40)	1-Methylnaphthalene	5.158	142	1279732	47.88	ppm		100
42)	Hexachlorocyclopentadiene	5.220	237	595649	51.56	ppm		100
43)	2,3,5-Trichlorophenol	5.225	196	525919	53.46	ppm		99
44)	2,4,6-Trichlorophenol	5.360	196	538847	51.49	ppm		99
45)	2,4,5-Trichlorophenol	5.394	196	564006	51.24	ppm		99
47)	2,3,4-Trichlorophenol	5.476	196	479411	49.70	ppm		100
48)	Biphenyl	5.591	154	1801506	48.07	ppm		100
49)	2-Chloronaphthalene	5.610	162	1633747	53.00	ppm		94
50)	2-Nitroaniline	5.730	65	445297	51.22	ppm		98
51)	2,6-Dimethylnaphthalene	5.773	156	1291814	48.67	ppm		100
52)	1,4-Dinitrobenzene	5.898	168	204754	53.66	ppm		100
53)	Dimethylphthalate	5.966	163	1660063	49.00	ppm		100
54)	1,3-Dinitrobenzene	5.990	168	235929	52.19	ppm		100
55)	2,6-Dinitrotoluene	6.029	165	352991	50.95	ppm		98
56)	1,2-Dinitrobenzene	6.091	168	149128	51.09	ppm	#	32
57)	Acenaphthylene	6.106	152	2505873	51.34	ppm		100
58)	3-Nitroaniline	6.226	138	367814	50.76	ppm		97
59)	Acenaphthene	6.317	153	1479879	48.45	ppm		99
60)	2,4-Dinitrophenol	6.346	184	164500	50.75	ppm		97
61)	4-Nitrophenol	6.418	109	261383	55.10	ppm		96
62)	2,4-Dinitrotoluene	6.514	165	469332	52.09	ppm		99
63)	Dibenzofuran	6.523	168	2104499	48.51	ppm		99
64)	2,3,5,6-Tetrachlorophenol	6.614	230	376682	52.41	ppm		100
65)	2,3,4,6-Tetrachlorophenol	6.667	232	510475	51.63	ppm		100
66)	2,3,5-Trimethylnaphtha...	6.781	170	1214381	48.90	ppm		100
67)	Diethylphthalate	6.818	149	1707916	49.75	ppm		100
68)	Fluorene	6.940	166	1642236	48.61	ppm		100
69)	4-Chlorophenyl-phenyle...	6.940	204	842803	48.97	ppm		99
70)	4-Nitroaniline	6.964	138	404059	54.21	ppm		100
72)	4,6-Dinitro-2-methylph...	6.997	198	273709	50.34	ppm		100
73)	N-Nitrosodiphenylamine	7.086	169	1398870	49.04	ppm		100
74)	Azobenzene	7.134	77	1638405	48.96	ppm		100
76)	4-Bromophenyl-phenylether	7.513	248	500611	49.95	ppm		98
77)	Hexachlorobenzene	7.570	284	507947	49.81	ppm		99
78)	Pentachlorophenol	7.792	266	316657	54.31	ppm		98
79)	Dibenzothiophene	7.896	184	2513390	48.81	ppm		96
80)	Phenanthrene	8.037	178	2554954	48.79	ppm		99
82)	Anthracene	8.098	178	2618283	49.64	ppm		100
83)	Carbazole	8.272	167	2221148	49.56	ppm		100
84)	Di-n-butylphthalate	8.664	149	2730384	50.25	ppm		100
85)	1-Methylphenanthrene	8.707	192	1854855	49.95	ppm		100
86)	Fluoranthene	9.316	202	2971362	50.35	ppm		99
89)	Pyrene	9.552	202	3257655	49.19	ppm		100
91)	Butylbenzylphthalate	10.222	149	1188907	52.95	ppm		99
92)	bis(2-ethylhexyl)adipate	10.299	129	954536	51.69	ppm		100
93)	3,3'-Dichlorobenzidine	10.752	252	1045654	52.41	ppm		99
94)	Benzo(a)anthracene	10.781	228	3009999	50.31	ppm		98
95)	Chrysene	10.820	228	2726827	49.30	ppm		100
96)	bis(2-Ethylhexyl)phtha...	10.801	149	1767206	50.98	ppm		100
98)	Di-n-octylphthalate	11.422	149	3048798	52.89	ppm		100
99)	Benzo(b)fluoranthene	11.816	252	2794385	51.35	ppm		99
100)	Benzo(k)fluoranthene	11.845	252	2659941	48.50	ppm		97
101)	Benzo(e)pyrene	12.101	252	2530641	50.39	ppm		98

KU 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.164	252	2626741	50.84 ppm	99
103) Perylene	12.256	252	2570491	49.57 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.573	276	2969853	51.91 ppm	100
105) Dibenzo(a,h)anthracene	13.602	278	2445773	51.31 ppm	97
106) Benzo(g,h,i)perylene	13.990	276	2490760	50.65 ppm	99

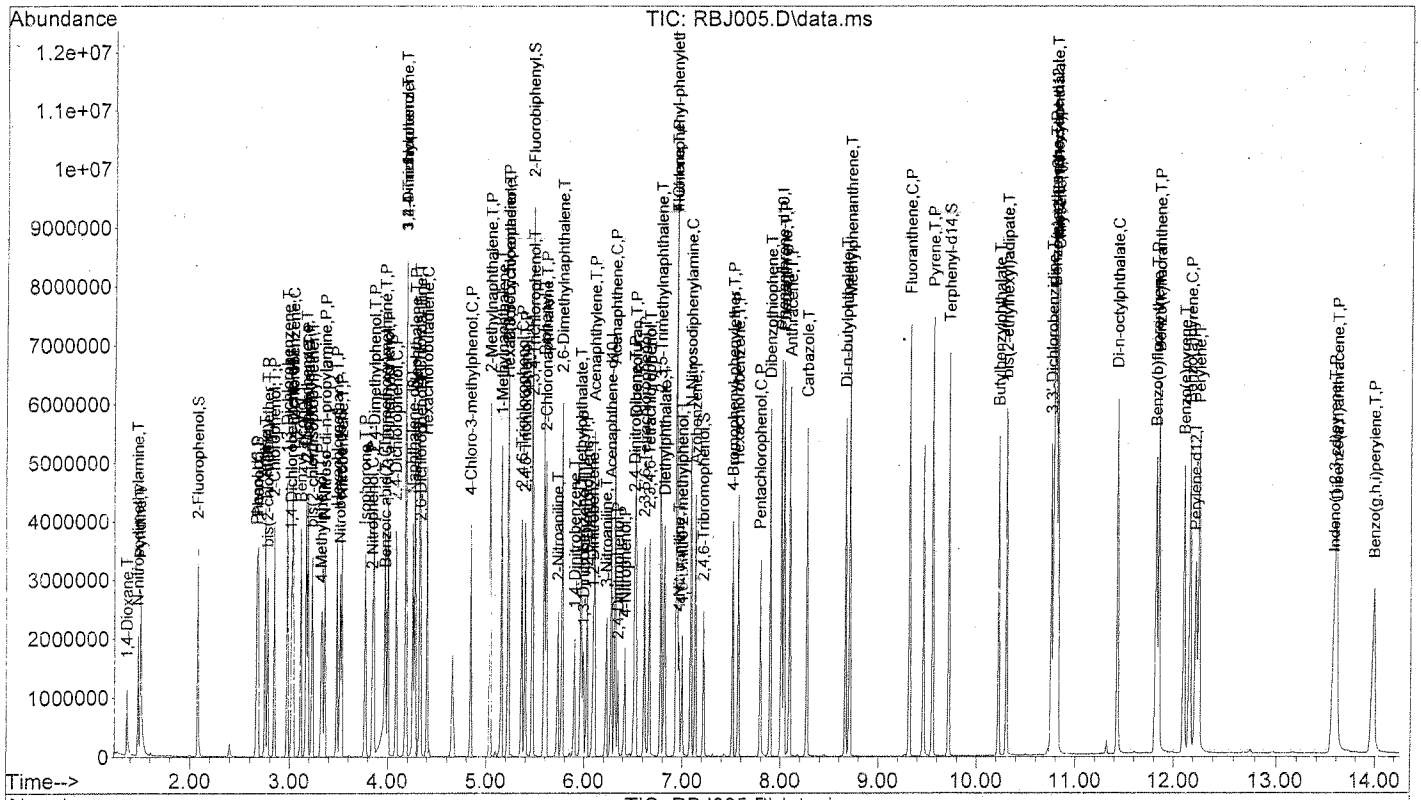
(#) = qualifier out of range (m) = manual integration (+) = signals summed

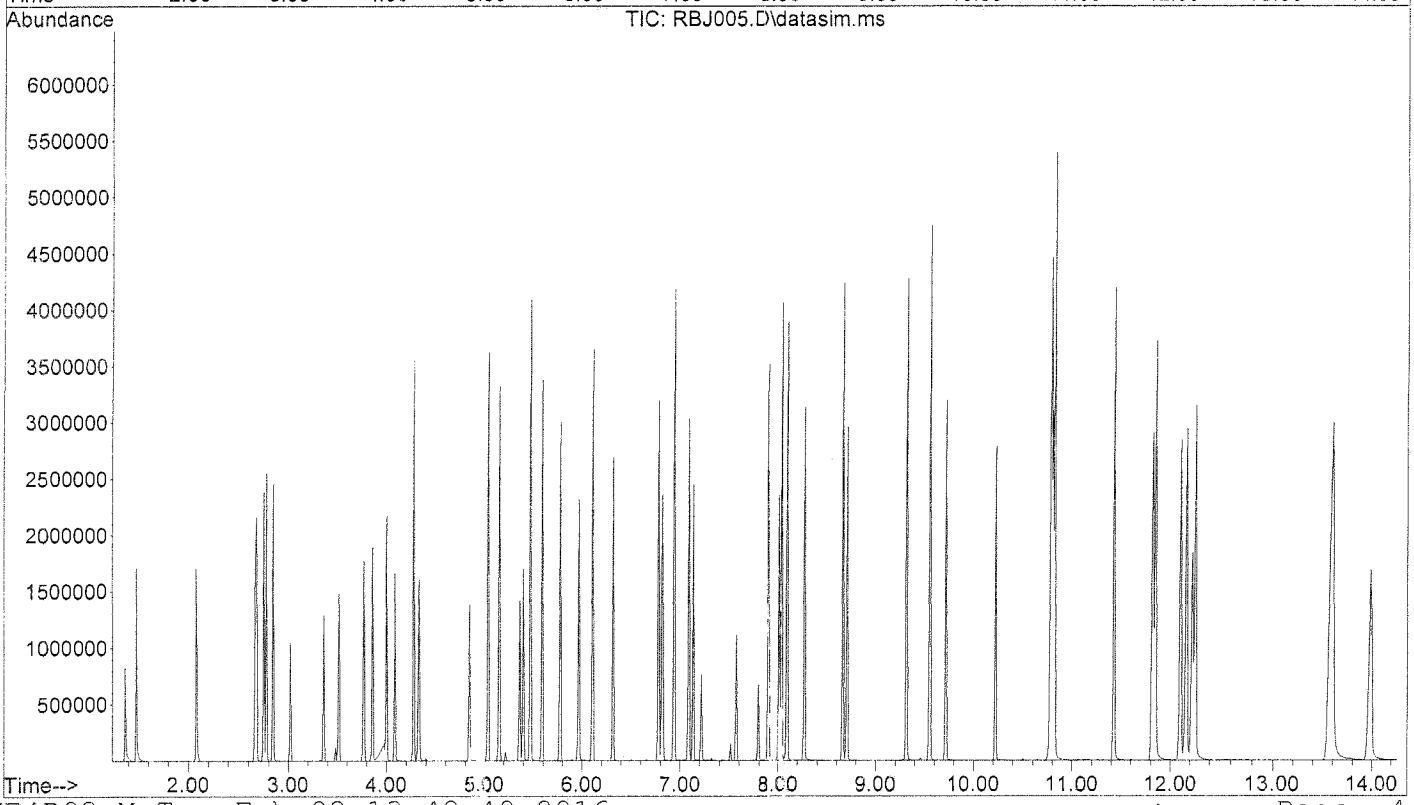
M 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00





JM 02-08-16

462

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ004.D
Acq On : 2 Feb 2016 9:28
Sample : SVE4B022
Misc : 80PPM
Integrator: RTE
Quant Time: Feb 02 13:47:31 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 4
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	457524	40.00	ppm	0.00
21) Naphthalene-d8	4.244	136	1635246	40.00	ppm	0.00
41) Acenaphthene-d10	6.269	164	965543	40.00	ppm	0.00
71) Phenanthrene-d10	8.004	188	1710410	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1882885	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1627440	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 30.000			Recovery	=	0.00%	
6) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 30.000			Recovery	=	0.00%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
46) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
75) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 30.000			Recovery	=	0.00%	
90) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
Target Compounds						Qvalue
4) Pyridine	1.500	79	1225737	70.07	ppm	100
27) Benzoic acid	3.988	105	910377	82.12	ppm	99

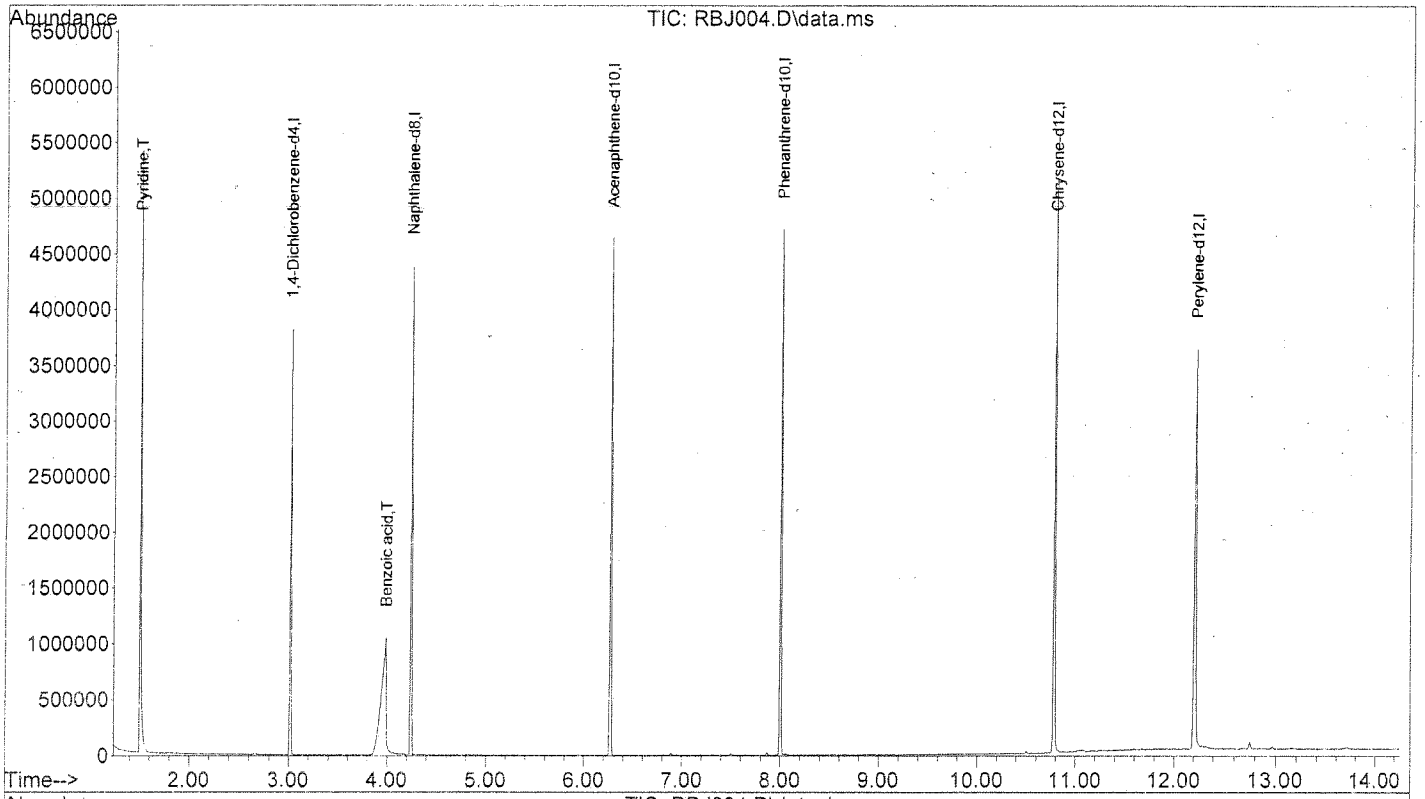
(#) = qualifier out of range (m) = manual integration (+) = signals summed

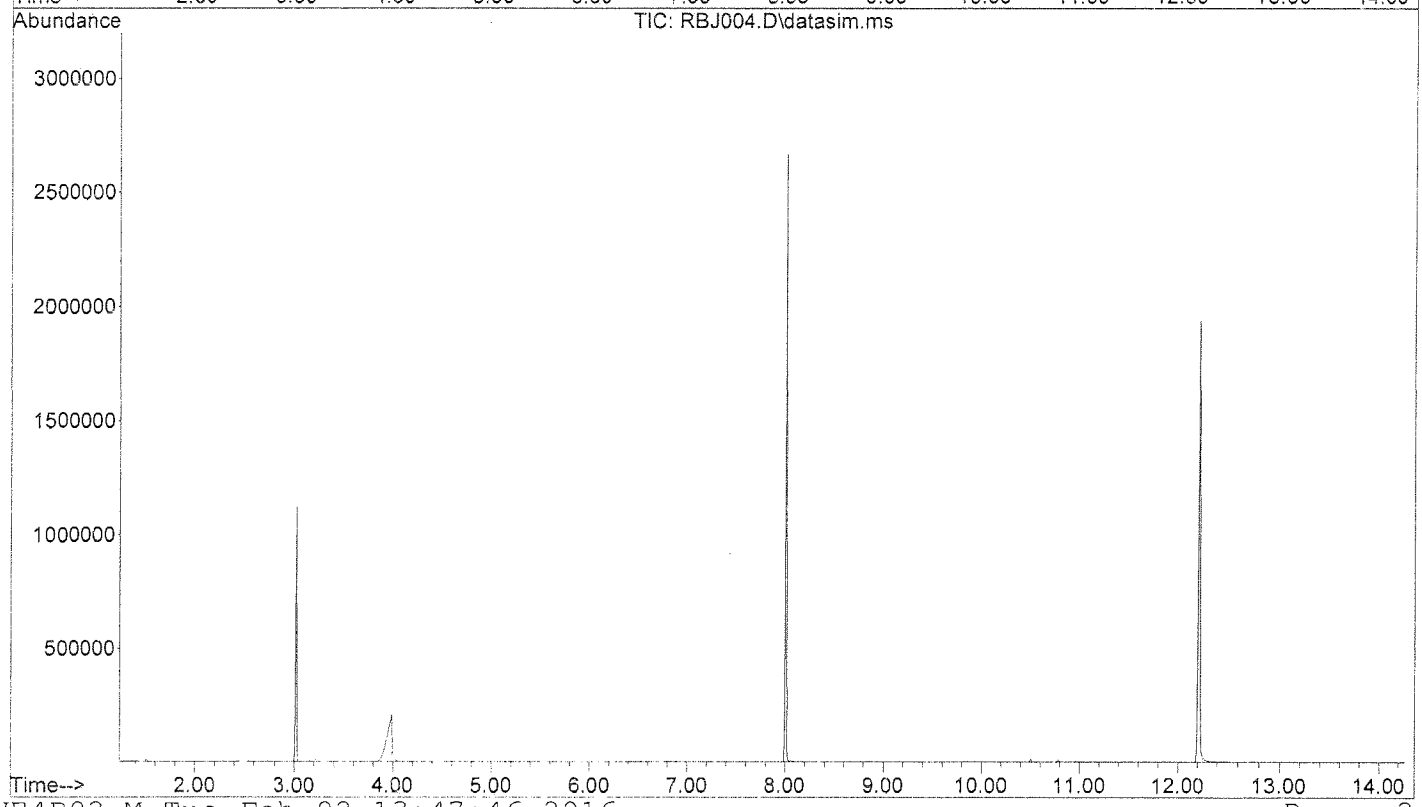
pu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ004.D
Acq On : 2 Feb 2016 9:28
Sample : SVE4B022
Misc : 80PPM
Integrator: RTE
Quant Time: Feb 02 13:47:31 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 4
Operator: KVu
Inst : E4
Multiplr: 1.00





TM 02-08-16

364

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ003.D
Acq On : 2 Feb 2016 9:09
Sample : SVE4B021
Misc : 100PPM
Integrator: RTE
Quant Time: Feb 02 13:46:13 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.015	152	461215	40.00 ppm	0.00
21) Naphthalene-d8	4.244	136	1653283	40.00 ppm	0.00
41) Acenaphthene-d10	6.269	164	975500	40.00 ppm	0.00
71) Phenanthrene-d10	8.004	188	1717161	40.00 ppm	0.00
87) Chrysene-d12	10.786	240	1841322	40.00 ppm	0.00
97) Perylene-d12	12.213	264	1572144	40.00 ppm	0.00
System Monitoring Compounds					
5) 2-Fluorophenol	0.000	112	0	0.00 ppm	
Spiked Amount 30.000			Recovery	= 0.00%	
6) Phenol-d5	0.000	99	0	0.00 ppm	
Spiked Amount 30.000			Recovery	= 0.00%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
22) Nitrobenzene-d5	0.000	82	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
46) 2-Fluorobiphenyl	0.000	172	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
75) 2,4,6-Tribromophenol	0.000	330	0	0.00 ppm	
Spiked Amount 30.000			Recovery	= 0.00%	
90) Terphenyl-d14	0.000	244	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
Target Compounds					Qvalue
4) Pyridine	1.500	79	1530996	86.82 ppm	100
27) Benzoic acid	4.003	105	1116737	99.22 ppm	99

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

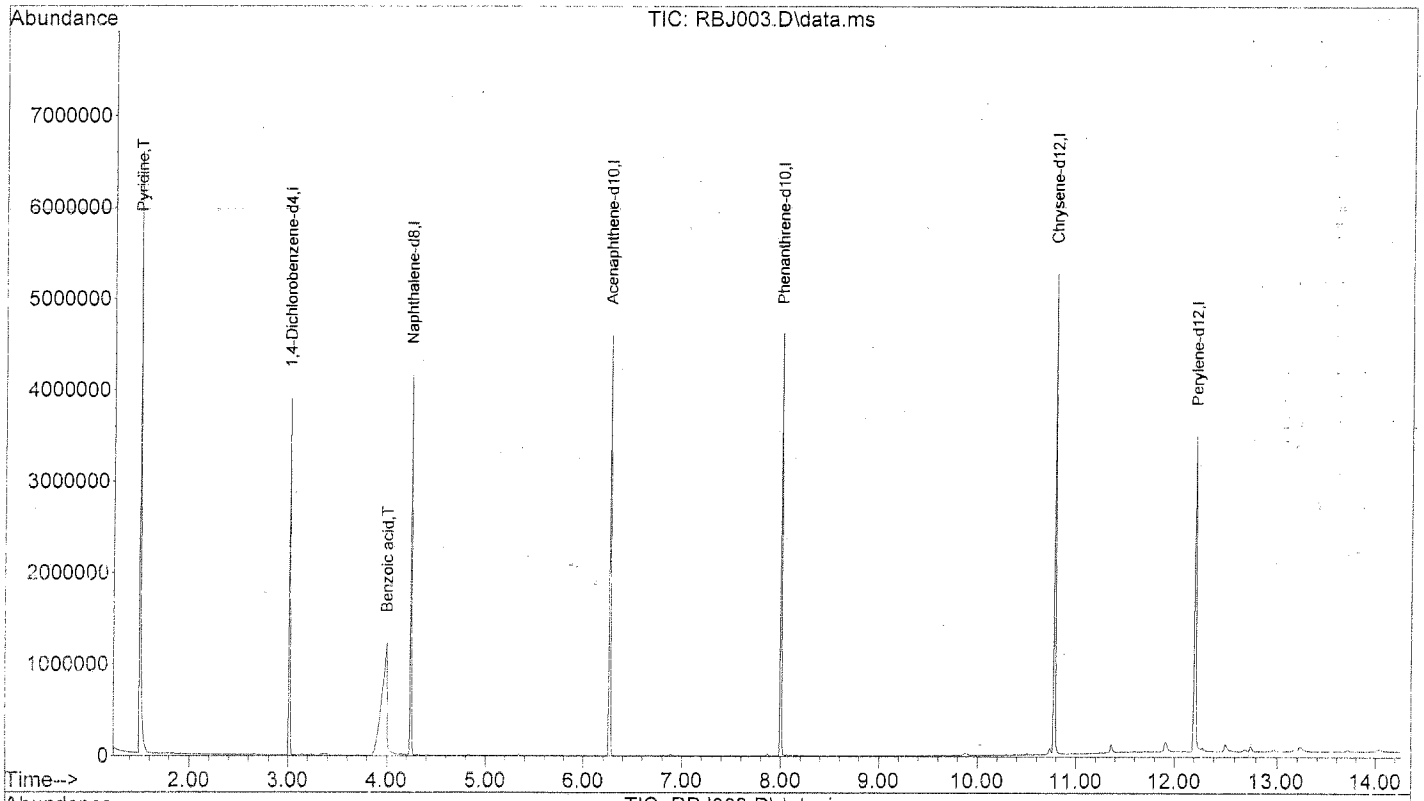
pu 02-08-16

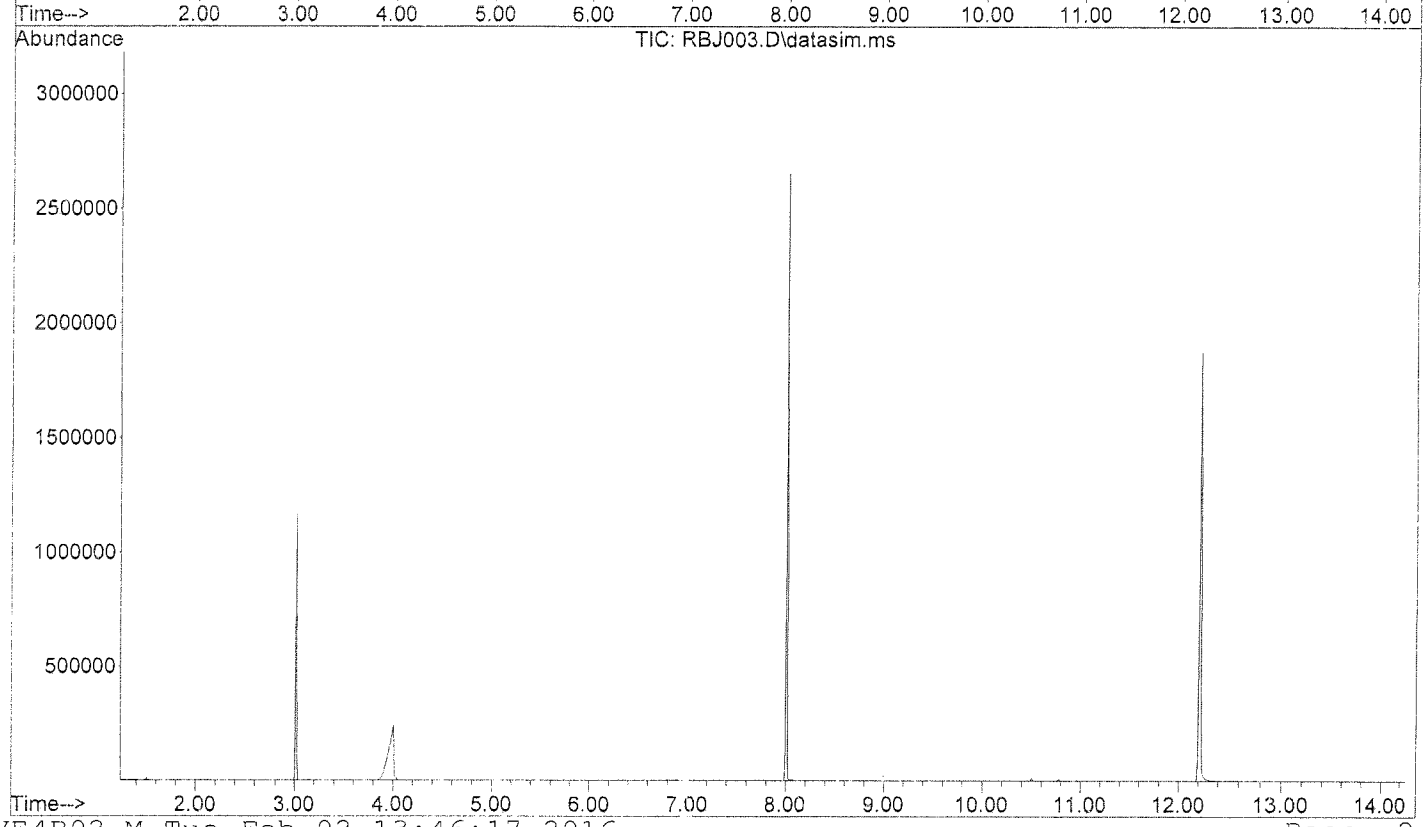
165

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ003.D
Acq On : 2 Feb 2016 9:09
Sample : SVE4B021
Misc : 100PPM
Integrator: RTE
Quant Time: Feb 02 13:46:13 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

466

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E4
IC Beginning DateTime :02/02/16 09:09
Spike Amount :25 PPM
CC/CV File :RBJ033
IC File :RBJ007

Column Spec :ZB-SEMI ID :0.18MM
IC Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02
Date_Time :02/02/16 18:46

M IDX	Parameters	CC_Con	CC% D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	489141	1	1	3.015	3.015	0				
2	1,4-Dioxane	22.596	-9.6	165529	0.541	0.599	1.366	1.367	6.63				
3	N-nitrosodimethylamine	26.445	5.8	274941	0.899	0.850	1.477	1.477	1.57				
4	Pyridine	26.398	5.6	493685	1.615	1.529	1.510	1.502	7.97				
5	2-Fluorophenol	24.469	-2.1	393116	1.286	1.314	2.075	2.072	1.13				
6	Phenol-d5	23.855	-4.6	473365	1.548	1.623	2.664	2.659	1.86				
7	Phenol	24.760	-1.0	509189	1.666	1.682	2.675	2.671	1.81				
8	Aniline	24.691	-1.2	646048	2.113	2.140	2.743	2.744	2.23				
9	bis(2-chloroethyl)ether	24.841	-0.6	387198	1.267	1.275	2.774	2.772	2.19				
10	2-Chlorophenol	27.267	9.1	473123	1.548	1.419	2.842	2.838	3.81				
11	1,3-Dichlorobenzene	25.348	1.4	512821	1.677	1.654	2.972	2.972	1.34				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	25.192	0.8	517539	1.693	1.680	3.030	3.030	1.55				
14	Benzyl alcohol	27.443	9.8	306097	1.001	0.912	3.111	3.109	2.45				
15	1,2-Dichlorobenzene	24.965	-0.1	489716	1.602	1.604	3.164	3.165	2.20				
16	2-Methylphenol	24.960	-0.2	350318	1.146	1.148	3.188	3.184	1.93				
17	bis(2-chloroisopropyl)ether	26.044	4.2	845452	2.766	2.655	3.226	3.229	3.22				
18	4-Methylphenol	25.055	0.2	465958	1.524	1.521	3.327	3.321	4.06				
19	N-Nitroso-di-n-propylamine	23.620	-5.5	307409	1.006	1.064	3.351	3.351	5.54				
20	Hexachloroethane	25.382	1.5	199174	0.652	0.642	3.475	3.477	2.07				
21	Naphthalene-d8	40.000	0	1779787	1	1	4.249	4.247	0				
22	Nitrobenzene-d5	7.760	-6.9	155855	0.420	0.451	3.509	3.508	1.58				
23	Nitrobenzene	24.472	-2.1	493471	0.444	0.453	3.528	3.528	1.42				
24	Isophorone	25.043	0.2	967528	0.870	0.868	3.758	3.758	1.97				
25	2-Nitrophenol	25.474	1.9	207281	0.186	0.183	3.840	3.839	7.64				
26	2,4-Dimethylphenol	24.571	-1.7	459153	0.413	0.420	3.854	3.854	1.54				
27	Benzoic acid	22.627	-9.5	255565	0.230	0.243	3.941	3.946	15.58	-0.0135	0.2778		0.9993
28	bis(2-Chloroethoxy)methane	25.630	2.5	517829	0.466	0.454	3.964	3.965	2.26				
29	3,5-Dimethylphenol	25.458	1.8	513128	0.461	0.453	3.993	3.993	7.12				
30	2,4-Dichlorophenol	24.247	-3.0	383974	0.345	0.356	4.080	4.077	2.03				
31	3,4-Dimethylphenol	25.620	2.5	563717	0.507	0.495	4.176	4.172	1.72				
32	1,2,4-Trichlorobenzene	25.352	1.4	458482	0.412	0.406	4.181	4.179	2.33				
33	Naphthalene	24.826	-0.7	1231112	1.107	1.115	4.273	4.270	2.29				
34	4-Chloroaniline	24.264	-2.9	512483	0.461	0.475	4.316	4.315	1.94				
35	2,6-Dichlorophenol	25.411	1.6	380739	0.342	0.337	4.326	4.324	1.66				
36	Hexachlorobutadiene	25.421	1.7	307063	0.276	0.271	4.398	4.395	1.22				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	24.974	-0.1	375198	0.337	0.338	4.837	4.836	3.57				
39	2-Methylnaphthalene	24.288	-2.8	847484	0.762	0.784	5.038	5.039	2.67				
40	1-Methylnaphthalene	25.838	3.4	789365	0.710	0.687	5.153	5.153	2.73				
41	Acenaphthene-d10	40.000	0	1073834	1	1	6.274	6.272	0				
42	Hexachlorocyclopentadiene	20.676	-17.3	278733	0.415	0.502	5.220	5.218	4.45				
43	2,3,5-Trichlorophenol	27.570	10.3	316541	0.472	0.428	5.225	5.223	9.04				
44	2,4,6-Trichlorophenol	25.565	2.3	312201	0.465	0.455	5.355	5.356	4.02				
45	2,4,5-Trichlorophenol	25.260	1.0	324477	0.483	0.478	5.394	5.391	3.93				
46	2-Fluorobiphenyl	7.647	-8.2	328057	1.467	1.598	5.466	5.466	2.17				
47	2,3,4-Trichlorophenol	25.644	2.6	288666	0.430	0.419	5.471	5.469	1.40				
48	Biphenyl	24.704	-1.2	1080316	1.610	1.629	5.586	5.585	2.80				
49	2-Chloronaphthalene	24.696	-1.2	888400	1.324	1.340	5.606	5.606	3.36				
50	2-Nitroaniline	26.040	4.2	264162	0.394	0.378	5.725	5.721	6.20				
51	2,6-Dimethylnaphthalene	25.700	2.8	796029	1.186	1.154	5.773	5.771	1.76				
52	1,4-Dinitrobenzene	25.502	2.0	113568	0.169	0.166	5.894	5.890	10.58				
53	Dimethylphthalate	26.053	4.2	1030100	1.535	1.473	5.956	5.955	1.25				
54	1,3-Dinitrobenzene	25.843	3.4	136331	0.203	0.197	5.981	5.979	9.11				
55	2,6-Dinitrotoluene	25.310	1.2	204654	0.305	0.301	6.019	6.019	3.30				
56	1,2-Dinitrobenzene	24.911	-0.4	84858	0.126	0.127	6.082	6.079	6.06				
57	Acenaphthylene	24.325	-2.7	1385515	2.064	2.122	6.101	6.101	4.18				
58	3-Nitroaniline	25.467	1.9	215352	0.321	0.315	6.216	6.216	3.68				
59	Acenaphthene	24.757	-1.0	882531	1.315	1.328	6.312	6.312	1.93				
60	2,4-Dinitrophenol	20.741	-17.0	72069	0.107	0.116	6.341	6.339	26.38	-0.0101	0.1488		0.9982
61	4-Nitrophenol	24.859	-0.6	137625	0.205	0.206	6.408	6.406	10.34				
62	2,4-Dinitrotoluene	24.327	-2.7	255773	0.381	0.392	6.504	6.503	7.16				
63	Dibenzofuran	24.476	-2.1	1239160	1.846	1.886	6.518	6.519	1.94				
64	2,3,5,6-Tetrachlorophenol	24.251	-3.0	203399	0.303	0.312	6.609	6.609	7.84				
65	2,3,4,6-Tetrachlorophenol	25.478	1.9	293976	0.438	0.430	6.662	6.661	4.25				
66	2,3,5-Trimethylnaphthalene	25.699	2.8	744817	1.110	1.080	6.776	6.774	1.25				
67	Diethylphthalate	26.275	5.1	1052601	1.568	1.492	6.814	6.811	1.03				
68	Fluorene	24.822	-0.7	978678	1.458	1.469	6.936	6.933	1.82				
69	4-Chlorophenyl-phenylether	24.457	-2.2	491256	0.732	0.748	6.940	6.939	1.34				
70	4-Nitroaniline	24.202	-3.2	210521	0.314	0.324	6.954	6.951	8.12				
71	Phenanthrene-d10	40.000	0	1895693	1	1	8.009	8.008	0				
72	4,6-Dinitro-2-methylphenol	22.982	-8.1	134236	0.113	0.112	6.992	6.988	21.93	-0.0075	0.1362		0.9998
73	N-Nitrosodiphenylamine	23.192	-7.2	751234	0.634	0.683	7.077	7.078	1.47				
74	Azobenzene	26.138	4.6	993325	0.838	0.802	7.129	7.128	1.51				
75	2,4,6-Tribromophenol	23.465	-6.1	106904	0.090	0.096	7.214	7.211	7.59				
76	4-Bromophenyl-phenylether	25.078	0.3	285435	0.241	0.240	7.509	7.508	2.11				
77	Hexachlorobenzene	25.072	0.3	290392	0.245	0.244	7.565	7.566	1.23				
78	Pentachlorophenol	26.123	4.5	172981	0.146	0.140	7.792	7.789	12.24				
79	Dibenzothiophene	25.813	3.3	1509521	1.274	1.234	7.891	7.891	2.20				
80	Phenanthrene	25.056	0.2	1490080	1.258	1.255	8.037	8.034	1.91				
81	Dinoseb												
82	Anthracene	24.300	-2.8	1455584	1.229	1.264	8.089	8.090	0.90				
83	Carbazole	25.060	0.2	1275569	1.077	1.074	8.267	8.267	1.46				
84	Di-n-butylphthalate	26.899	7.6	1660019	1.401	1.302	8.659	8.660	3.60				
85	1-Methylphenanthrene	25.075	0.3	1057563	0.893	0.890	8.702	8.702	1.11				
86	Fluoranthene	24.447	-2.2	1638390	1.383	1.414	9.311	9.311	1.15				
87	Chrysene-d12	40.000	0	2074726	1	1	10.786	10.788	0				
88	Benzidine												
89	Pyrene	25.759	3.0	1827352	1.409	1.368	9.547	9.547	3.42				
90	Terphenyl-d14	7.582	-9.0	336765	0.780	0.856	9.707	9.713	1.41				
91	Butylbenzylphthalate	28.554	14.2	686803	0.530	0.464	10.218	10.219	11.98				
92	bis(2-ethylhexyl)adipate	26.227	4.9	518849	0.400	0.381	10.295	10.298	10.19				
93	3,3'-Dichlorobenzidine	23.966	-4.1	512206	0.395	0.412	10.748	10.748	6.19				
94	Benzo(a)anthracene	24.744	-1.0	1586069	1.223	1.236	10.777	10.777	1.31				
95	Chrysene	25.777	3.1	1527372	1.178	1.142	10.811	10.814	1.42				
96	bis(2-Ethylhexyl)phthalate	26.820	7.3	996004	0.768	0.716	10.796	10.799	6.46				
97	Perylene-d12	40.000	0	1806442	1	1	12.213	12.215	0				
98	Di-n-octylphthalate	28.056	12.2	1721627	1.525	1.359	11.417	11.420	11.88				
99	Benzo(b)fluoranthene	25.330	1.3	1467439	1.300	1.283	11.806	11.809	3.32				
100	Benzo(k)fluoranthene	24.587	-1.7	1435344	1.271	1.293	11.835	11.837	2.85				
101	Benzo(e)pyrene	24.928	-0.3	1332727	1.180	1.184	12.091	12.094	1.87				
102	Benzo(a)pyrene	24.547	-1.8	1350115	1.196	1.218	12.150	12.152	2.59				
103	Perylene	24.626	-1.5	1359345	1.204	1.222	12.242	12.245	1.55				
104	Indeno(1,2,3-cd)pyrene	25.485	1.9	1552263	1.375	1.349	13.553	13.560	5.04				
105	Dibenzo(a,h)anthracene	24.749	-1.0	1255853	1.112	1.124	13.578	13.584	4.34				
106	Benzo(g,h,i)perylene	25.986	3.9	1360492	1.205	1.159	13.966	13.966	2.24				

Pu 02-08-16

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	115	0.00
2	T	1,4-Dioxane	25.000	22.596	9.6	107	0.00
3	T	N-nitrosodimethylamine	25.000	26.445	-5.8	119	0.00
4	T	Pyridine	25.000	26.398	-5.6	114	0.00
5	S	2-Fluorophenol	25.000	24.469	2.1	111	0.00
6	S	Phenol-d5	25.000	23.855	4.6	106	0.00
7	C,P	Phenol	25.000	24.760	1.0	112	0.00
8	T	Aniline	25.000	24.691	1.2	111	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	24.841	0.6	111	0.00
10	T,P	2-Chlorophenol	25.000	27.266	-9.1	126	0.00
11	T	1,3-Dichlorobenzene	25.000	25.348	-1.4	115	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	0.00
13	C	1,4-Dichlorobenzene	25.000	25.193	-0.8	115	0.00
14	T	Benzyl alcohol	25.000	27.443	-9.8	124	0.00
15	T	1,2-Dichlorobenzene	25.000	24.965	0.1	113	0.00
16	T,P	2-Methylphenol	25.000	24.960	0.2	113	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	26.044	-4.2	119	0.00
18	T,P	4-Methylphenol	25.000	25.055	-0.2	114	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	23.620	5.5	109	0.00
20	T,P	Hexachloroethane	25.000	25.382	-1.5	114	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	116	0.00
22	S	Nitrobenzene-d5 8.333	25.000	7.760	6.9 ~~69.0#~~	~~35~~ 105	0.00
23	T,P	Nitrobenzene	25.000	24.472	2.1	111	0.00
24	T,P	Isophorone	25.000	25.043	-0.2	114	0.00
25	C,P	2-Nitrophenol	25.000	25.474	-1.9	110	0.00
26	T,P	2,4-Dimethylphenol	25.000	24.571	1.7	111	0.00
27	T	Benzoic acid	25.000	22.627	9.5	105	0.00
28	T,P	bis(2-Chloroethoxy)methane	25.000	25.630	-2.5	117	0.00
29	T	3,5-Dimethylphenol	25.000	25.459	-1.8	111	0.00
30	C,P	2,4-Dichlorophenol	25.000	24.247	3.0	110	0.00
31	T	3,4-Dimethylphenol	25.000	25.620	-2.5	116	0.00
32	T	1,2,4-Trichlorobenzene	25.000	25.352	-1.4	117	0.00
33	T,P	Naphthalene	25.000	24.826	0.7	114	0.00
34	T	4-Chloroaniline	25.000	24.264	2.9	110	0.00
35	T	2,6-Dichlorophenol	25.000	25.411	-1.6	115	0.00
36	C	Hexachlorobutadiene	25.000	25.421	-1.7	116	0.00
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	24.974	0.1	113	0.00
39	T,P	2-Methylnaphthalene	25.000	24.288	2.8	111	0.00
40	T	1-Methylnaphthalene	25.000	25.838	-3.4	118	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	115	0.00
42	P	Hexachlorocyclopentadiene	25.000	20.676	17.3	94	0.00
43	T	2,3,5-Trichlorophenol	25.000	27.570	-10.3	122	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	25.565	-2.3	116	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	25.260	-1.0	113	0.00
46	S	2-Fluorobiphenyl 8.333	~~25.000~~	7.647	8.2 ~~69.4#~~	~~35~~ 105	0.00
47	T	2,3,4-Trichlorophenol	25.000	25.644	-2.6	118	0.00
48	T	Biphenyl	25.000	24.704	1.2	114	0.00
49	T,P	2-Chloronaphthalene	25.000	24.696	1.2	116	0.00

KTV 2/3/16

02-08-16

468

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	26.040	-4.2	115	0.00
51	T	2,6-Dimethylnaphthalene	25.000	25.700	-2.8	117	0.00
52	T	1,4-Dinitrobenzene	25.000	25.502	-2.0	110	0.00
53	T	Dimethylphthalate	25.000	26.053	-4.2	120	0.00
54	T	1,3-Dinitrobenzene	25.000	25.843	-3.4	112	0.00
55	T,P	2,6-Dinitrotoluene	25.000	25.311	-1.2	114	0.00
56	T	1,2-Dinitrobenzene	25.000	24.911	0.4	109	0.00
57	T,P	Acenaphthylene	25.000	24.325	2.7	105	0.00
58	T	3-Nitroaniline	25.000	25.467	-1.9	115	0.00
59	C,P	Acenaphthene	25.000	24.757	1.0	114	0.00
60	P	2,4-Dinitrophenol	25.000	20.741	17.0	94	0.00
61	P	4-Nitrophenol	25.000	24.859	0.6	110	0.00
62	T,P	2,4-Dinitrotoluene	25.000	24.327	2.7	107	0.00
63	T,P	Dibenzofuran	25.000	24.476	2.1	113	0.00
64	T	2,3,5,6-Tetrachlorophenol	25.000	24.251	3.0	107	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	25.478	-1.9	115	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	25.699	-2.8	118	0.00
67	T	Diethylphthalate	25.000	26.275	-5.1	119	0.00
68	T,P	Fluorene	25.000	24.822	0.7	114	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	24.457	2.2	113	0.00
70	T	4-Nitroaniline	25.000	24.202	3.2	104	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	112	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	22.982	8.1	101	0.00
73	C	N-Nitrosodiphenylamine	25.000	23.192	7.2	103	0.00
74	T	Azobenzene	25.000	26.138	-4.6	117	0.00
75	S	2,4,6-Tribromophenol	25.000	23.465	6.1	101	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	25.078	-0.3	113	0.00
77	T,P	Hexachlorobenzene	25.000	25.072	-0.3	113	0.00
78	C,P	Pentachlorophenol	25.000	26.123	-4.5	110	0.00
79	T	Dibenzothiophene	25.000	25.813	-3.3	116	0.00
80	T,P	Phenanthrene	25.000	25.056	-0.2	112	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	24.300	2.8	107	0.00
83	T	Carbazole	25.000	25.060	-0.2	112	0.00
84	T	Di-n-butylphthalate	25.000	26.899	-7.6	116	0.00
85	T	1-Methylphenanthrene	25.000	25.075	-0.3	111	0.00
86	C,P	Fluoranthene	25.000	24.447	2.2	109	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	112	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	25.759	-3.0	109	0.00
90	S	Terphenyl-d14	~~25.000~~ 8.333	7.582	~~69.7#~~ 9.0	~~34~~ 162	0.00
91	T	Butylbenzylphthalate	25.000	28.554	-14.2	119	0.00
92	T	bis(2-ethylhexyl)adipate	25.000	26.227	-4.9	110	0.00
93	T	3,3'-Dichlorobenzidine	25.000	23.966	4.1	104	0.00
94	T,P	Benzo(a)anthracene	25.000	24.745	1.0	110	0.00
95	T,P	Chrysene	25.000	25.777	-3.1	115	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	26.820	-7.3	115	0.00
97	I	Perylene-d12	40.000	40.000	0.0	113	0.00

KV 2/3/16

JM 02-08-16

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Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	28.056	-12.2	119	0.00
99	T,P	Benzo(b)fluoranthene	25.000	25.330	-1.3	109	0.00
100	T,P	Benzo(k)fluoranthene	25.000	24.587	1.7	113	0.00
101	T	Benzo(e)pyrene	25.000	24.928	0.3	110	0.00
102	C,P	Benzo(a)pyrene	25.000	24.547	1.8	109	0.00
103	T	Perylene	25.000	24.626	1.5	110	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	25.485	-1.9	112	0.00
105	T,P	Dibenzo(a,h)anthracene	25.000	24.749	1.0	108	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	25.986	-3.9	116	0.00

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

pu 02-08-16

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
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Vial: 33
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Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	115	0.00	
2	T	1,4-Dioxane	0.599	0.541	9.7	107	0.00	
3	T	N-nitrosodimethylamine	0.850	0.899	-5.8	119	0.00	
4	T	Pyridine	1.529	1.615	-5.6	114	0.00	
5	S	2-Fluorophenol	1.314	1.286	2.1	111	0.00	
6	S	Phenol-d5	1.623	1.548	4.6	106	0.00	
7	C,P	Phenol	1.682	1.666	1.0	112	0.00	
8	T	Aniline	2.140	2.113	1.3	111	0.00	
9	T,P	bis(2-chloroethyl)ether	1.275	1.267	0.6	111	0.00	
10	T,P	2-Chlorophenol	1.419	1.548	-9.1	126	0.00	
11	T	1,3-Dichlorobenzene	1.654	1.677	-1.4	115	0.00	
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	0.00	
13	C	1,4-Dichlorobenzene	1.680	1.693	-0.8	115	0.00	
14	T	Benzyl alcohol	0.912	1.001	-9.8	124	0.00	
15	T	1,2-Dichlorobenzene	1.604	1.602	0.1	113	0.00	
16	T,P	2-Methylphenol	1.148	1.146	0.2	113	0.00	
17	T	bis(2-chloroisopropyl)ether	2.655	2.766	-4.2	119	0.00	
18	T,P	4-Methylphenol	1.521	1.524	-0.2	114	0.00	
19	P,P	N-Nitroso-di-n-propylamine	1.064	1.006	5.5	109	0.00	
20	T,P	Hexachloroethane	0.642	0.652	-1.6	114	0.00	
21	I	Naphthalene-d8	1.000	1.000	0.0 6.9	116 105	0.00	
22	S	Nitrobenzene-d5	0.451	~~0.140~~ 0.42	~~69~~.0#	~~35~~#	0.00	
23	T,P	Nitrobenzene	0.453	0.444	2.0	111	0.00	
24	T,P	Isophorone	0.868	0.870	-0.2	114	0.00	
25	C,P	2-Nitrophenol	0.183	0.186	-1.6	110	0.00	
26	T,P	2,4-Dimethylphenol	0.420	0.413	1.7	111	0.00	
27	T	Benzoic acid	0.243	0.230	5.3	105	0.00	
28	T,P	bis(2-Chloroethoxy)methane	0.454	0.466	-2.6	117	0.00	
29	T	3,5-Dimethylphenol	0.453	0.461	-1.8	111	0.00	
30	C,P	2,4-Dichlorophenol	0.356	0.345	3.1	110	0.00	
31	T	3,4-Dimethylphenol	0.495	0.507	-2.4	116	0.00	
32	T	1,2,4-Trichlorobenzene	0.406	0.412	-1.5	117	0.00	
33	T,P	Naphthalene	1.115	1.107	0.7	114	0.00	
34	T	4-Chloroaniline	0.475	0.461	2.9	110	0.00	
35	T	2,6-Dichlorophenol	0.337	0.342	-1.5	115	0.00	
36	C	Hexachlorobutadiene	0.271	0.276	-1.8	116	0.00	KV
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00	
38	C,P	4-Chloro-3-methylphenol	0.338	0.337	0.3	113	0.00	2/3/16
39	T,P	2-Methylnaphthalene	0.784	0.762	2.8	111	0.00	
40	T	1-Methylnaphthalene	0.687	0.710	-3.3	118	0.00	
41	I	Acenaphthene-d10	1.000	1.000	0.0	115	0.00	
42	P	Hexachlorocyclopentadiene	0.502	0.415	17.3	94	0.00	
43	T	2,3,5-Trichlorophenol	0.428	0.472	-10.3	122	0.00	
44	C,P	2,4,6-Trichlorophenol	0.455	0.465	-2.2 8	116 105	0.00	
45	T,P	2,4,5-Trichlorophenol	0.478	0.483	-1.0	113	0.00	
46	S	2-Fluorobiphenyl	1.598	~~0.489~~ 1.487	~~69~~.4#	~~35~~#	0.00	
47	T	2,3,4-Trichlorophenol	0.419	0.430	-2.6	118	0.00	
48	T	Biphenyl	1.629	1.610	1.2	114	0.00	JM 02-08-16
49	T,P	2-Chloronaphthalene	1.340	1.324	1.2	116	0.00	

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.378	0.394	-4.2	115	0.00
51	T	2,6-Dimethylnaphthalene	1.154	1.186	-2.8	117	0.00
52	T	1,4-Dinitrobenzene	0.166	0.169	-1.8	110	0.00
53	T	Dimethylphthalate	1.473	1.535	-4.2	120	0.00
54	T	1,3-Dinitrobenzene	0.197	0.203	-3.0	112	0.00
55	T,P	2,6-Dinitrotoluene	0.301	0.305	-1.3	114	0.00
56	T	1,2-Dinitrobenzene	0.127	0.126	0.8	109	0.00
57	T,P	Acenaphthylene	2.122	2.064	2.7	105	0.00
58	T	3-Nitroaniline	0.315	0.321	-1.9	115	0.00
59	C,P	Acenaphthene	1.328	1.315	1.0	114	0.00
60	P	2,4-Dinitrophenol	0.116	0.107	7.8	94	0.00
61	P	4-Nitrophenol	0.206	0.205	0.5	110	0.00
62	T,P	2,4-Dinitrotoluene	0.392	0.381	2.8	107	0.00
63	T,P	Dibenzofuran	1.886	1.846	2.1	113	0.00
64	T	2,3,5,6-Tetrachlorophenol	0.312	0.303	2.9	107	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.430	0.438	-1.9	115	0.00
66	T	2,3,5-Trimethylnaphthalene	1.080	1.110	-2.8	118	0.00
67	T	Diethylphthalate	1.492	1.568	-5.1	119	0.00
68	T,P	Fluorene	1.469	1.458	0.7	114	0.00
69	T,P	4-Chlorophenyl-phenylether	0.748	0.732	2.1	113	0.00
70	T	4-Nitroaniline	0.324	0.314	3.1	104	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	112	0.00
72	T	4,6-Dinitro-2-methylphenol	0.112	0.113	-0.9	101	0.00
73	C	N-Nitrosodiphenylamine	0.683	0.634	7.2	103	0.00
74	T	Azobenzene	0.802	0.838	-4.5	117	0.00
75	S	2,4,6-Tribromophenol	0.096	0.090	6.3	101	0.00
76	T,P	4-Bromophenyl-phenylether	0.240	0.241	-0.4	113	0.00
77	T,P	Hexachlorobenzene	0.244	0.245	-0.4	113	0.00
78	C,P	Pentachlorophenol	0.140	0.146	-4.3	110	0.00
79	T	Dibenzothiophene	1.234	1.274	-3.2	116	0.00
80	T,P	Phenanthrene	1.255	1.258	-0.2	112	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.264	1.229	2.8	107	0.00
83	T	Carbazole	1.074	1.077	-0.3	112	0.00
84	T	Di-n-butylphthalate	1.302	1.401	-7.6	116	0.00
85	T	1-Methylphenanthrene	0.890	0.893	-0.3	111	0.00
86	C,P	Fluoranthene	1.414	1.383	2.2	109	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	112	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.368	1.409	-3.0 8.9	109 102	0.00 KV
90	S	Terphenyl-d14	0.856	~~0.260~~ .78	~~69~~.6#	~~34~~#	0.00
91	T	Butylbenzylphthalate	0.464	0.530	-14.2	119	0.00 2/3/16
92	T	bis(2-ethylhexyl)adipate	0.381	0.400	-5.0	110	0.00
93	T	3,3'-Dichlorobenzidine	0.412	0.395	4.1	104	0.00
94	T,P	Benzo(a)anthracene	1.236	1.223	1.1	110	0.00
95	T,P	Chrysene	1.142	1.178	-3.2	115	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.716	0.768	-7.3	115	0.00
97	I	Perylene-d12	1.000	1.000	0.0	113	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.359	1.525	-12.2	119	0.00
99	T,P	Benzo(b)fluoranthene	1.283	1.300	-1.3	109	0.00
100	T,P	Benzo(k)fluoranthene	1.293	1.271	1.7	113	0.00
101	T	Benzo(e)pyrene	1.184	1.180	0.3	110	0.00
102	C,P	Benzo(a)pyrene	1.218	1.196	1.8	109	0.00
103	T	Perylene	1.222	1.204	1.5	110	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.349	1.375	-1.9	112	0.00
105	T,P	Dibenzo(a,h)anthracene	1.124	1.112	1.1	108	0.00
106	T,P	Benzo(g,h,i)perylene	1.159	1.205	-4.0	116	0.00

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

JM 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	489141	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1779787	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	1073834	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1895693	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	2074726	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1806442	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.075	112	393116	24.47	ppm	0.00
Spiked Amount 30.000			Recovery = 81.57%			
6) Phenol-d5	2.665	99	473365	23.86	ppm	0.00
Spiked Amount 30.000			Recovery = 79.53%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.509	82	155855	7.76	ppm	0.00
Spiked Amount 10.000			Recovery = 77.60%			
46) 2-Fluorobiphenyl	5.466	172	328057	7.65	ppm	0.00
Spiked Amount 10.000			Recovery = 76.50%			
75) 2,4,6-Tribromophenol	7.214	330	106904	23.47	ppm	0.00
Spiked Amount 30.000			Recovery = 78.23%			
90) Terphenyl-d14	9.707	244	336765	7.58	ppm	0.00
Spiked Amount 10.000			Recovery = 75.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	165529	22.60	ppm	97
3) N-nitrosodimethylamine	1.477	74	274941	26.45	ppm	99
4) Pyridine	1.510	79	493685	26.40	ppm	99
7) Phenol	2.675	94	509189	24.76	ppm	99
8) Aniline	2.743	93	646048	24.69	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	387198	24.84	ppm	98
10) 2-Chlorophenol	2.842	128	473123	27.27	ppm	85
11) 1,3-Dichlorobenzene	2.972	146	512821	25.35	ppm	99
13) 1,4-Dichlorobenzene	3.030	146	517539	25.19	ppm	100
14) Benzyl alcohol	3.111	108	306097	27.44	ppm	97
15) 1,2-Dichlorobenzene	3.164	146	489716	24.96	ppm	99
16) 2-Methylphenol	3.188	107	350318	24.96	ppm	97
17) bis(2-chloroisopropyl)...	3.226	45	845452	26.04	ppm	99
18) 4-Methylphenol	3.327	107	465958	25.05	ppm	100
19) N-Nitroso-di-n-propyla...	3.351	70	307409	23.62	ppm	94
20) Hexachloroethane	3.475	117	199174	25.38	ppm	99
23) Nitrobenzene	3.528	77	493471	24.47	ppm	99
24) Isophorone	3.758	82	967528	25.04	ppm	100
25) 2-Nitrophenol	3.840	139	207281	25.47	ppm	99
26) 2,4-Dimethylphenol	3.854	107	459153	24.57	ppm	99
27) Benzoic acid	3.940	105	255565	22.63	ppm	100
28) bis(2-Chloroethoxy)met...	3.964	93	517829	25.63	ppm	99
29) 3,5-Dimethylphenol	3.993	107	513128	25.46	ppm	100
30) 2,4-Dichlorophenol	4.080	162	383974	24.25	ppm	99
31) 3,4-Dimethylphenol	4.176	107	563717	25.62	ppm	99
32) 1,2,4-Trichlorobenzene	4.181	180	458482	25.35	ppm	99
33) Naphthalene	4.273	128	1231112	24.83	ppm	100
34) 4-Chloroaniline	4.316	127	512483	24.26	ppm	100
35) 2,6-Dichlorophenol	4.326	162	380739	25.41	ppm	99
36) Hexachlorobutadiene	4.398	225	307063	25.42	ppm	100

02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.837	107	375198	24.97	ppm	99
39)	2-Methylnaphthalene	5.038	142	847484	24.29	ppm	100
40)	1-Methylnaphthalene	5.153	142	789365	25.84	ppm	99
42)	Hexachlorocyclopentadiene	5.220	237	278733	20.68	ppm	99
43)	2,3,5-Trichlorophenol	5.225	196	316541	27.57	ppm	97
44)	2,4,6-Trichlorophenol	5.355	196	312201	25.56	ppm	99
45)	2,4,5-Trichlorophenol	5.394	196	324477	25.26	ppm	99
47)	2,3,4-Trichlorophenol	5.471	196	288666	25.64	ppm	99
48)	Biphenyl	5.586	154	1080316	24.70	ppm	99
49)	2-Chloronaphthalene	5.606	162	888400	24.70	ppm	100
50)	2-Nitroaniline	5.725	65	264162	26.04	ppm	99
51)	2,6-Dimethylnaphthalene	5.773	156	796029	25.70	ppm	100
52)	1,4-Dinitrobenzene	5.894	168	113568	25.50	ppm	97
53)	Dimethylphthalate	5.956	163	1030100	26.05	ppm	100
54)	1,3-Dinitrobenzene	5.980	168	136331	25.84	ppm	98
55)	2,6-Dinitrotoluene	6.019	165	204654	25.31	ppm	100
56)	1,2-Dinitrobenzene	6.082	168	84858	24.91	ppm	97
57)	Acenaphthylene	6.101	152	1385515	24.32	ppm	97
58)	3-Nitroaniline	6.216	138	215352	25.47	ppm	98
59)	Acenaphthene	6.312	153	882531	24.76	ppm	100
60)	2,4-Dinitrophenol	6.341	184	72069	20.74	ppm	97
61)	4-Nitrophenol	6.408	109	137625	24.86	ppm	99
62)	2,4-Dinitrotoluene	6.504	165	255773	24.33	ppm	98
63)	Dibenzofuran	6.518	168	1239160	24.48	ppm	100
64)	2,3,5,6-Tetrachlorophenol	6.610	230	203399	24.25	ppm	99
65)	2,3,4,6-Tetrachlorophenol	6.662	232	293976	25.48	ppm	98
66)	2,3,5-Trimethylnaphtha...	6.776	170	744817	25.70	ppm	99
67)	Diethylphthalate	6.814	149	1052601	26.28	ppm	100
68)	Fluorene	6.936	166	978678	24.82	ppm	99
69)	4-Chlorophenyl-phenyle...	6.940	204	491256	24.46	ppm	98
70)	4-Nitroaniline	6.954	138	210521	24.20	ppm	94
72)	4,6-Dinitro-2-methylph...	6.992	198	134236	22.98	ppm	97
73)	N-Nitrosodiphenylamine	7.077	169	751234	23.19	ppm	99
74)	Azobenzene	7.129	77	993325	26.14	ppm	100
76)	4-Bromophenyl-phenylether	7.509	248	285435	25.08	ppm	99
77)	Hexachlorobenzene	7.565	284	290392	25.07	ppm	99
78)	Pentachlorophenol	7.792	266	172981	26.12	ppm	97
79)	Dibenzothiophene	7.891	184	1509521	25.81	ppm	97
80)	Phenanthrene	8.037	178	1490080	25.06	ppm	100
82)	Anthracene	8.089	178	1455584	24.30	ppm	100
83)	Carbazole	8.267	167	1275569	25.06	ppm	99
84)	Di-n-butylphthalate	8.659	149	1660019	26.90	ppm	100
85)	1-Methylphenanthrene	8.702	192	1057563	25.08	ppm	99
86)	Fluoranthene	9.311	202	1638390	24.45	ppm	99
89)	Pyrene	9.547	202	1827352	25.76	ppm	99
91)	Butylbenzylphthalate	10.218	149	686803	28.55	ppm	99
92)	bis(2-ethylhexyl)adipate	10.295	129	518849	26.23	ppm	98
93)	3,3'-Dichlorobenzidine	10.747	252	512206	23.97	ppm	100
94)	Benzo(a)anthracene	10.777	228	1586069	24.74	ppm	99
95)	Chrysene	10.811	228	1527372	25.78	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.796	149	996004	26.82	ppm	99
98)	Di-n-octylphthalate	11.417	149	1721627	28.06	ppm	100
99)	Benzo(b)fluoranthene	11.806	252	1467439	25.33	ppm	96
100)	Benzo(k)fluoranthene	11.835	252	1435344	24.59	ppm	99
101)	Benzo(e)pyrene	12.091	252	1332727	24.93	ppm	98

RM 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	12.150	252	1350115	24.55	ppm	99
103) Perylene	12.242	252	1359345	24.63	ppm	99
104) Indeno(1,2,3-cd)pyrene	13.553	276	1552263	25.49	ppm	96
105) Dibenzo(a,h)anthracene	13.578	278	1255853	24.75	ppm	99
106) Benzo(g,h,i)perylene	13.966	276	1360492	25.99	ppm	100

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

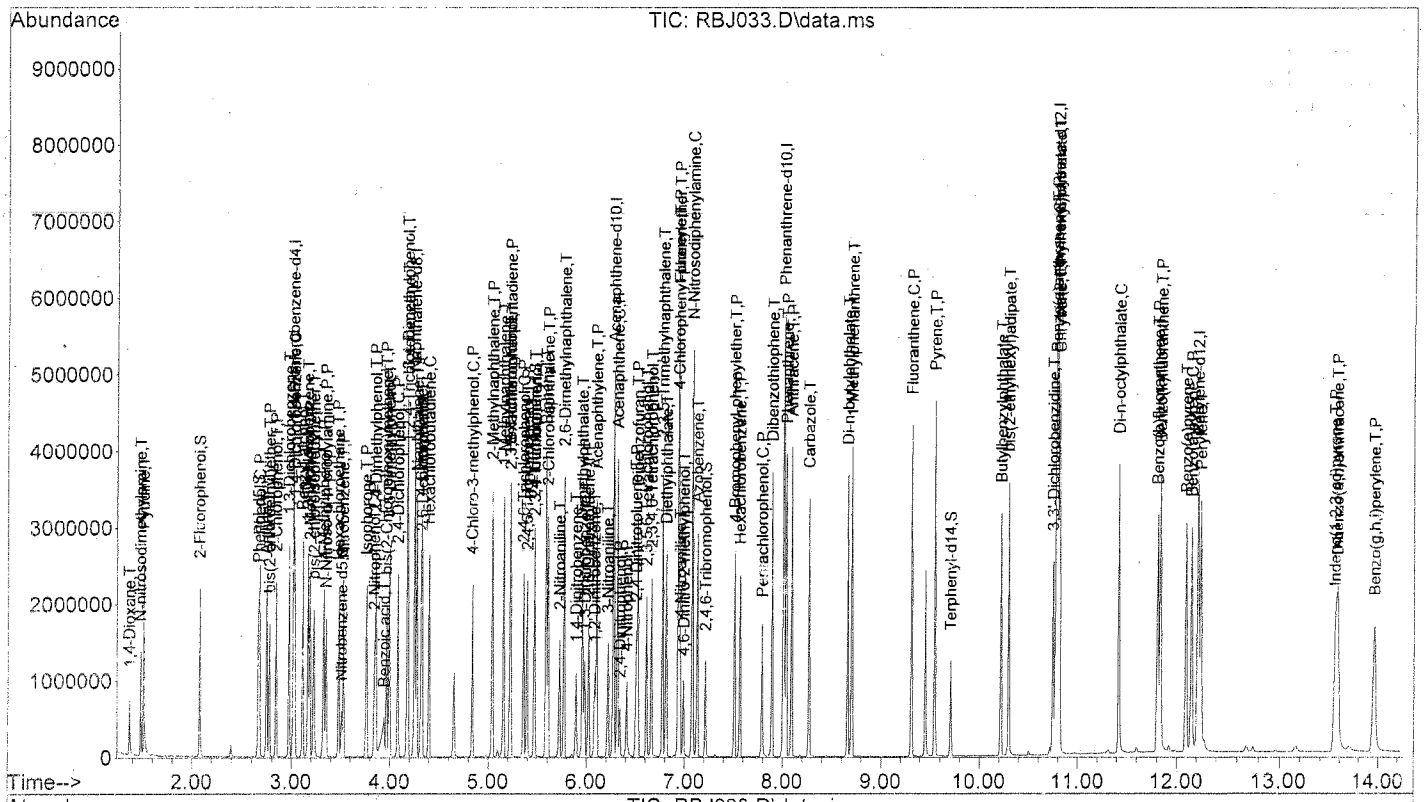
M 02-08-16

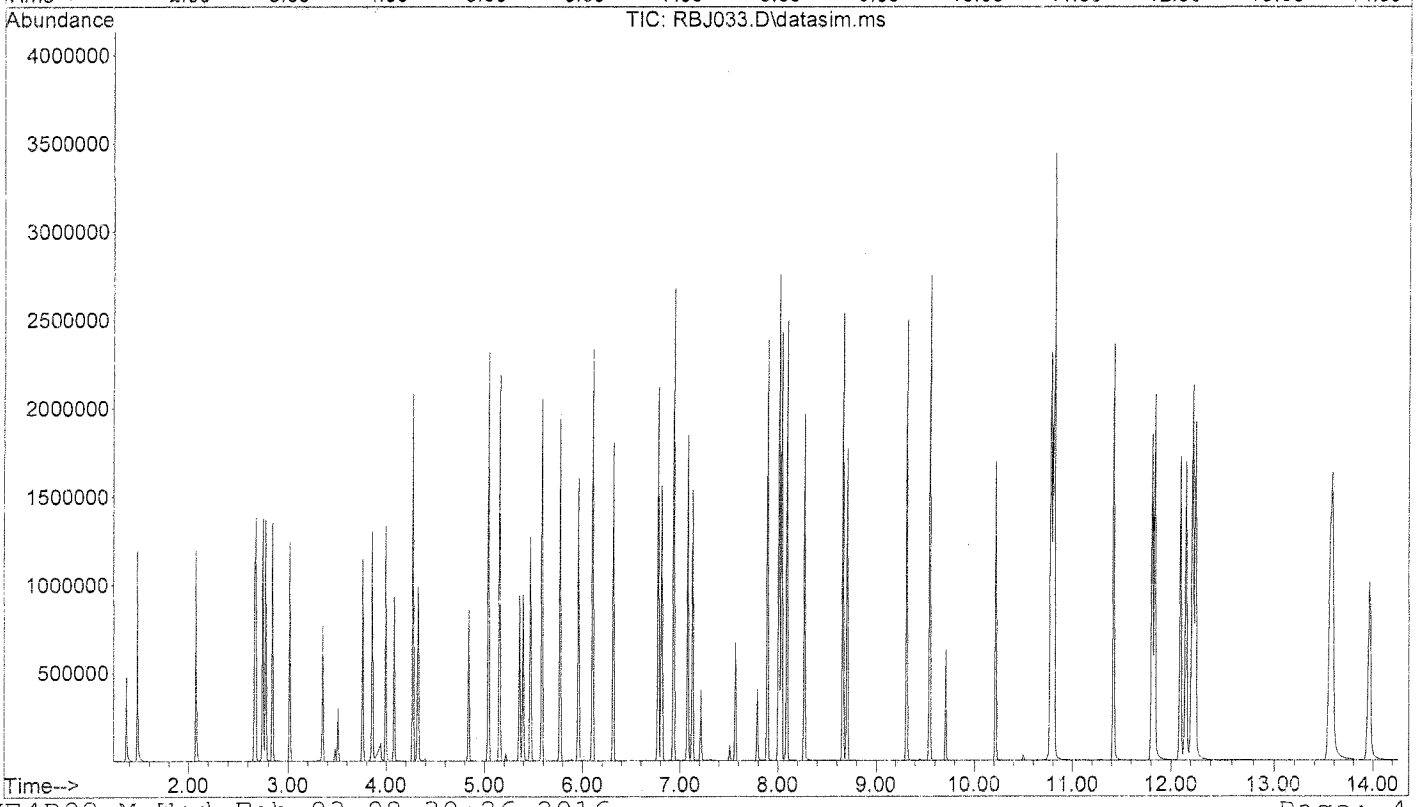
477

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ207
Instrument ID: TOE4

Project: CANNON AFB PBR
SDG No.: 16B094
DFTPP Injection Date: 02/22/16
DFTPP Injection Time: 09:31

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	45.91
68	Less than 2% of mass 69	0.67(1.6)1
69	% of mass 198	41.94
70	Less than 2% of mass 69	0.18(0.4)1
127	10.0 - 80.0% of mass 198	50.24
197	Less than 2.0% of mass 198	0.20
198	Base Peak, 100	100.00
199	5.0 - 9.0% of mass 198	7.15
275	10.0 - 60.0% of mass 198	23.75
365	Greater than 1.00% of mass 198	2.71
441	Present, but less than 24% of mass 442	9.82(14.9)2
442	Greater than 50% of mass 198	66.16
443	15.0 - 24.0% of mass 442	12.26(18.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	CSVE4B0209	RBJ208	02/22/16	10:01
2	MBLK1W	SVB018WB	RBJ210	02/22/16	10:39
3	LCS1W	SVB018WL	RBJ211	02/22/16	10:59
4	LCD1W	SVB018WC	RBJ212	02/22/16	11:18
5	CAFB-IDW-W-022016	B094-03	RBJ220	02/22/16	13:54

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:CANNON AFB PBR
SDG No.: 16B094
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	424119	3.02	1535126	4.25	929909	6.27
	UPPER LIMIT	848238	3.52	3070252	4.75	1859818	6.77
	LOWER LIMIT	212060	2.52	767563	3.75	464955	5.77
	SAMPLE ID						
1	SSTD025	528088	3.02	1962818	4.26	1144905	6.28
2	MBLK1W	454567	3.02	1707237	4.25	963841	6.28
3	LCS1W	533212	3.02	1972392	4.25	1136664	6.28
4	LCD1W	481183	3.02	1807777	4.25	1047868	6.28
5	CAFB-IDW-W-022016	495434	3.02	1811127	4.25	1067222	6.28

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:CANNON AFB PBR
SDG No.: 16B094
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1694673	8.01	1850796	10.79	1601653	12.22
	UPPER LIMIT	3389346	8.51	3701592	11.29	3203306	12.72
	LOWER LIMIT	847337	7.51	925398	10.29	800827	11.72
	SAMPLE ID						
1	SSTD025	2111950	8.02	2405604	10.81	2072006	12.25
2	MBLK1W	1729833	8.02	1866739	10.80	1698046	12.24
3	LCS1W	2057969	8.02	2339403	10.81	2142971	12.25
4	LCD1W	1820098	8.02	2055164	10.81	1858009	12.24
5	CAFB-IDW-W-022016	1975087	8.02	2295967	10.80	1581478	12.24

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 :E4
IC Beginning DateTime :02/02/16 09:09
Spike Amount :25 PPM
CC/CV File :RBJ208
IC File :RBJ007

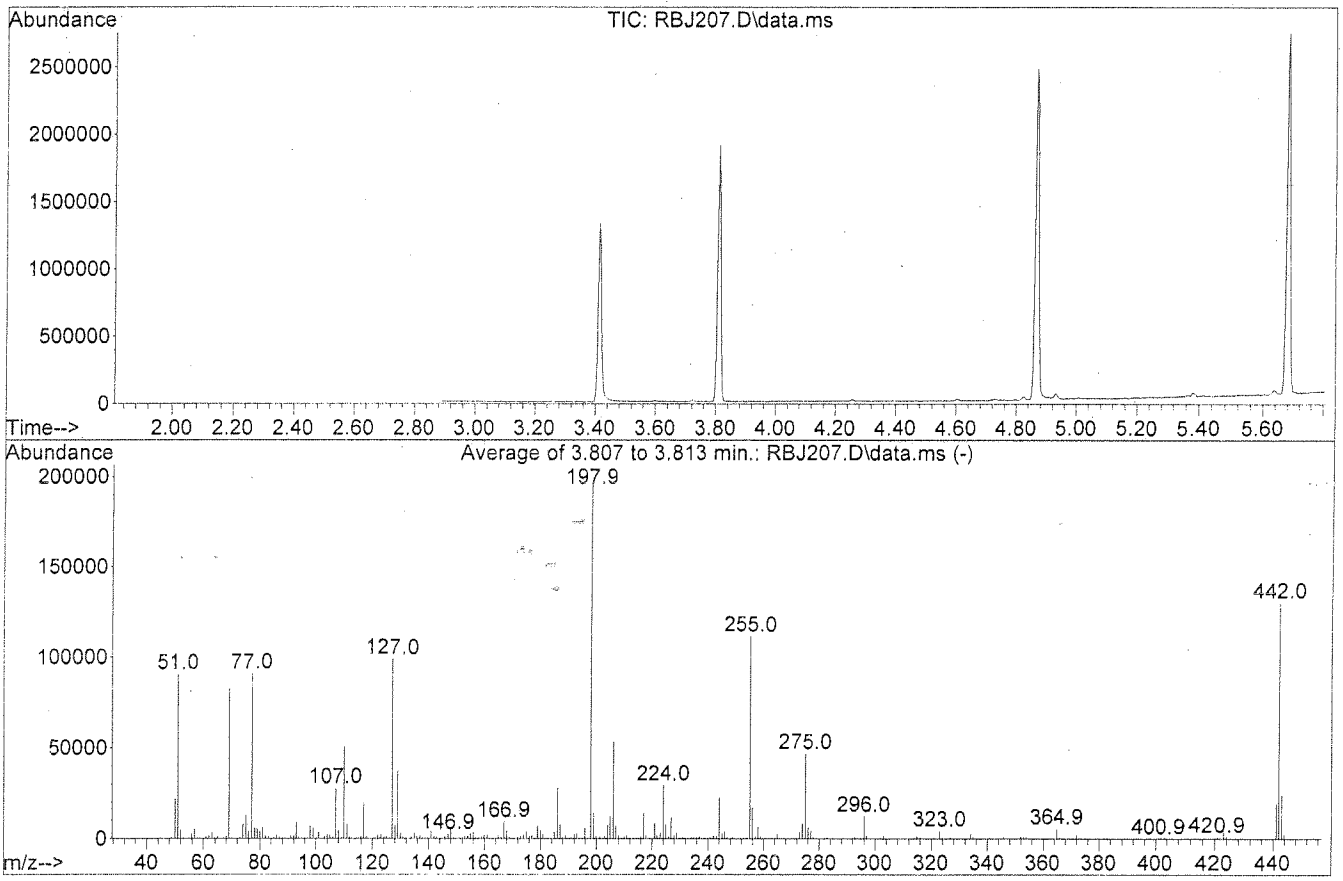
Column Spec :ZB-SEMI ID :0.18MM
IC Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02
Date_Time :02/22/16 10:01

M IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AvRRF	CC Rtm	AvRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	528088	1	1	3.025	3.015	0				
2	1,4-Dioxane	22.160	-11.4	175256	0.531	0.599	1.367	1.367	6.63				
3	N-nitrosodimethylamine	22.507	-10.0	252634	0.765	0.850	1.481	1.477	1.57				
4	Pyridine	23.175	-7.3	469922	1.418	1.527	1.510	1.502	7.97				
5	2-Fluorophenol	23.232	-4.3	415101	1.258	1.314	2.085	2.072	1.13				
6	Phenol-d5	23.834	-4.7	510599	1.547	1.623	2.680	2.659	1.86				
7	Phenol	24.024	-3.9	533387	1.616	1.682	2.691	2.671	1.81				
8	Aniline	22.878	-8.5	646268	1.958	2.140	2.753	2.744	2.23				
9	bis(2-chloroethyl)ether	23.185	-7.3	390152	1.182	1.275	2.779	2.772	2.19				
10	2-Chlorophenol	25.551	2.2	478661	1.450	1.419	2.852	2.838	3.81				
11	1,3-Dichlorobenzene	23.463	-6.1	512484	1.553	1.654	2.977	2.972	1.34				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	23.296	-6.8	516682	1.565	1.680	3.039	3.030	1.55				
14	Benzyl alcohol	24.157	-3.4	290900	0.881	0.912	3.121	3.109	2.45				
15	1,2-Dichlorobenzene	23.203	-7.2	491399	1.489	1.604	3.174	3.165	2.20				
16	2-Methylphenol	25.414	1.7	385101	1.167	1.148	3.202	3.184	1.93				
17	bis(2-chloroisopropyl)ether	21.320	-14.7	747197	2.264	2.655	3.236	3.229	3.22				
18	4-Methylphenol	23.370	-6.5	499226	1.422	1.521	3.341	3.351	4.06				
19	N-Nitroso-di-n-propylamine	24.354	-2.6	342205	1.037	1.064	3.356	3.351	2.54				
20	Hexachloroethane	22.935	-8.3	194300	0.589	0.642	3.480	3.477	2.07				
21	Naphthalene-d8	40.000	0	1962818	1	1	4.258	4.247	0				
22	Nitrobenzene-d5	22.223	-11.1	492216	0.401	0.451	3.519	3.508	1.58				
23	Nitrobenzene	21.587	-13.7	480057	0.391	0.453	3.538	3.528	1.42				
24	Isophorone	22.480	-10.1	957828	0.781	0.868	3.768	3.758	1.97				
25	2-Nitrophenol	26.819	7.3	270661	0.196	0.183	3.849	3.839	7.27				
26	2,4-Dimethylphenol	22.332	-10.7	460225	0.375	0.420	3.869	3.854	1.54				
27	Benzoic acid	23.014	-7.9	287123	0.234	0.243	3.964	3.946	15.58	-0.0135	0.2778		0.9993
28	bis(2-Chloroethoxy)methane	22.135	-11.5	493218	0.402	0.454	3.969	3.965	2.26				
29	3,5-Dimethylphenol	23.451	-6.2	521286	0.425	0.453	4.012	3.993	7.12				
30	2,4-Dichlorophenol	21.839	-12.6	381405	0.311	0.356	4.094	4.077	2.03				
31	3,4-Dimethylphenol	22.484	-10.1	545582	0.445	0.495	4.191	4.172	1.72				
32	1,2,4-Trichlorobenzene	21.463	-14.1	428065	0.349	0.406	4.191	4.179	2.33				
33	Naphthalene	23.490	-6.0	1284660	1.047	1.115	4.278	4.270	2.39				
34	4-Chloroaniline	23.366	-6.5	544273	0.444	0.475	4.326	4.315	1.94				
35	2,6-Dichlorophenol	22.416	-10.3	370400	0.302	0.337	4.335	4.324	1.66				
36	Hexachlorobutadiene	20.401	-18.4	271758	0.222	0.271	4.403	4.395	1.22				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	23.580	-5.7	390689	0.318	0.338	4.861	4.836	3.57				
39	2-Methylnaphthalene	22.841	-8.6	878958	0.716	0.784	5.048	5.039	2.67				
40	1-Methylnaphthalene	22.668	-9.3	763733	0.623	0.687	5.163	5.153	2.73				
41	Acenaphthene-d10	40.000	0	1144905	1	1	6.284	6.272	0				
42	Hexachlorocyclopentadiene	21.386	-14.5	307392	0.430	0.502	5.225	5.218	4.45				
43	2,3,5-Trichlorophenol	25.208	0.8	308576	0.431	0.428	5.244	5.223	9.04				
44	2,4,6-Trichlorophenol	22.727	-9.1	295910	0.414	0.455	5.374	5.356	4.02				
45	2,4,5-Trichlorophenol	23.023	-7.9	315318	0.441	0.478	5.418	5.391	3.93				
46	2-Fluorobiphenyl	22.377	-10.5	1023401	1.430	1.598	5.476	5.466	2.17				
47	2,3,4-Trichlorophenol	23.565	-5.7	282817	0.395	0.419	5.490	5.469	1.40				
48	Biphenyl	22.760	-9.0	1061184	1.483	1.629	5.596	5.585	2.80				
49	2-Chloronaphthalene	25.080	0.3	961931	1.344	1.340	5.620	5.606	3.36				
50	2-Nitroaniline	25.091	0.4	271391	0.379	0.378	5.740	5.721	6.20				
51	2,6-Dimethylnaphthalene	23.016	-7.9	760083	1.062	1.154	5.778	5.771	1.76				
52	1,4-Dinitrobenzene	27.401	9.6	130098	0.182	0.166	5.908	5.890	10.58				
53	Dimethylphthalate	23.699	-5.2	999036	1.396	1.473	5.961	5.955	1.25				
54	1,3-Dinitrobenzene	25.511	2.0	143487	0.201	0.197	6.000	5.979	9.11				
55	2,6-Dinitrotoluene	24.958	-0.2	215158	0.301	0.301	6.034	6.019	3.30				
56	1,2-Dinitrobenzene	25.714	2.9	93390	0.131	0.127	6.096	6.079	6.06				
57	Acenaphthylene	25.001	0.0	1518305	2.122	2.122	6.115	6.101	4.18				
58	3-Nitroaniline	26.290	5.2	237027	0.331	0.315	6.236	6.216	3.68				
59	Acenaphthene	23.364	-6.5	888003	1.241	1.328	6.322	6.312	1.93				
60	2,4-Dinitrophenol	26.861	7.4	102907	0.144	0.116	6.360	6.339	26.38	-0.0101	0.1488		0.9982
61	4-Nitrophenol	24.064	-3.7	142045	0.199	0.206	6.451	6.406	10.34				
62	2,4-Dinitrotoluene	25.738	3.0	288515	0.403	0.392	6.518	6.503	7.16				
63	Dibenzofuran	22.910	-8.4	1236626	1.728	1.886	6.533	6.519	1.94				
64	2,3,5,6-Tetrachlorophenol	23.489	-6.0	210047	0.294	0.312	6.629	6.609	7.84				
65	2,3,4,6-Tetrachlorophenol	23.922	-4.3	294290	0.411	0.430	6.681	6.661	4.25				
66	2,3,5-Trimethylnaphthalene	23.305	-7.8	720036	1.006	1.080	6.786	6.774	1.25				
67	Diethylphthalate	24.623	-2.1	1034633	1.446	1.492	6.818	6.811	1.03				
68	Fluorene	23.537	-5.9	989418	1.383	1.469	6.942	6.933	1.82				
69	4-Chlorophenyl-phenylether	22.310	-10.8	477784	0.668	0.748	6.943	6.939	1.34				
70	4-Nitroaniline	28.268	13.1	262161	0.366	0.324	6.973	6.951	8.12				
71	Phenanthrene-d10	40.000	0	2111950	1	1	8.023	8.008	0				
72	4,6-Dinitro-2-methylphenol	25.948	3.8	170887	0.129	0.112	7.011	6.988	21.93	-0.0075	0.1362		0.9998
73	N-Nitrosodiphenylamine	23.195	-7.2	837068	0.634	0.683	7.091	7.078	1.47				
74	Azobenzene	22.431	-10.2	950543	0.720	0.802	7.134	7.128	1.51				
75	2,4,6-Tribromophenol	26.988	8.0	136981	0.104	0.096	7.229	7.211	7.59				
76	4-Bromophenyl-phenylether	22.473	-10.1	284966	0.216	0.240	7.518	7.508	2.11				
77	Hexachlorobenzene	23.913	-4.3	308562	0.234	0.244	7.579	7.566	1.23				
78	Pentachlorophenol	24.323	-2.7	179434	0.136	0.140	7.811	7.789	12.24				
79	Dibenzothiophene	22.781	-8.9	1484147	1.124	1.234	7.905	7.891	2.20				
80	Phenanthrene	22.698	-9.2	1503854	1.139	1.255	8.046	8.034	1.91				
81	Dinoseb												
82	Anthracene	23.041	-7.8	1537659	1.165	1.264	8.103	8.090	0.90				
83	Carbazole	23.834	-4.7	1351586	1.024	1.074	8.281	8.267	1.46				
84	Di-n-butylphthalate	25.150	0.6	1729139	1.310	1.302	8.663	8.660	3.60				
85	1-Methylphenanthrene	22.919	-8.3	1076865	0.816	0.890	8.717	8.702	1.11				
86	Fluoranthene	22.806	-8.8	1702741	1.290	1.414	9.325	9.311	1.15				
87	Chrysene-d12	40.000	0	2405604	1	1	10.810	10.788	0				
88	Benzidine												
89	Pyrene	21.760	-13.0	1789843	1.190	1.368	9.566	9.547	3.42				
90	Terphenyl-d14	23.064	-7.7	1187724	0.790	0.856	9.725	9.713	1.41				
91	Butylbenzylphthalate	27.867	11.5	777169	0.517	0.464	10.222	10.219	11.98				
92	bis(2-ethylhexyl)adipate	28.515	14.1	654081	0.435	0.381	10.299	10.298	10.19				
93	3,3'-Dichlorobenzidine	26.181	4.7	648781	0.432	0.412	10.767	10.748	6.19				
94	Benzo(a)anthracene	22.907	-8.4	1702423	1.132	1.236	10.796	10.777	1.31				
95	Chrysene	22.478	-10.1	1547274	1.027	1.142	10.835	10.814	1.42				
96	bis(2-Ethylhexyl)phthalate	25.855	3.4	1113296	0.740	0.716	10.800	10.799	6.46				
97	Perylene-d12	40.000	0	2072006	1	1	12.246	12.215	0				
98	Di-n-octylphthalate	28.425	13.7	2000687	1.545	1.359	11.422	11.420	11.88				
99	Benzo(b)fluoranthene	25.042	0.2	1664030	1.285	1.283	11.835	11.809	3.32				
100	Benzo(k)fluoranthene	22.188	-11.2	1485750	1.147	1.293	11.863	11.837	2.85				
101	Benzo(e)pyrene	23.458	-6.2	1438547	1.111	1.184	12.125	12.094	1.87				
102	Benzo(a)pyrene	22.103	-3.6	1520575	1.174	1.218	12.183	12.152	2.59				
103	Perylene	23.206	-7.2	1469253	1.135	1.226	12.280	12.245	1.55				
104	Indeno(1,2,3-cd)pyrene	24.718	-1.1	1726853	1.333	1.349	13.616	13.560	5.04				
105	Dibenzo(a,h)anthracene	24.779	-0.9	1442185	1.114	1.124	13.635	13.584	4.34				
106	Benzo(g,h,i)perylene	23.940	-4.2	1437608	1.110	1.159	14.028	13.966	2.24				

Data Path : D:\DATA\16B22\
Data File : RBJ207.D
Acq On : 22 Feb 2016 9:31
Operator : KVu
Sample : DFTE4B0209
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP 8270D
Last Update : Tue Feb 02 13:55:35 2016



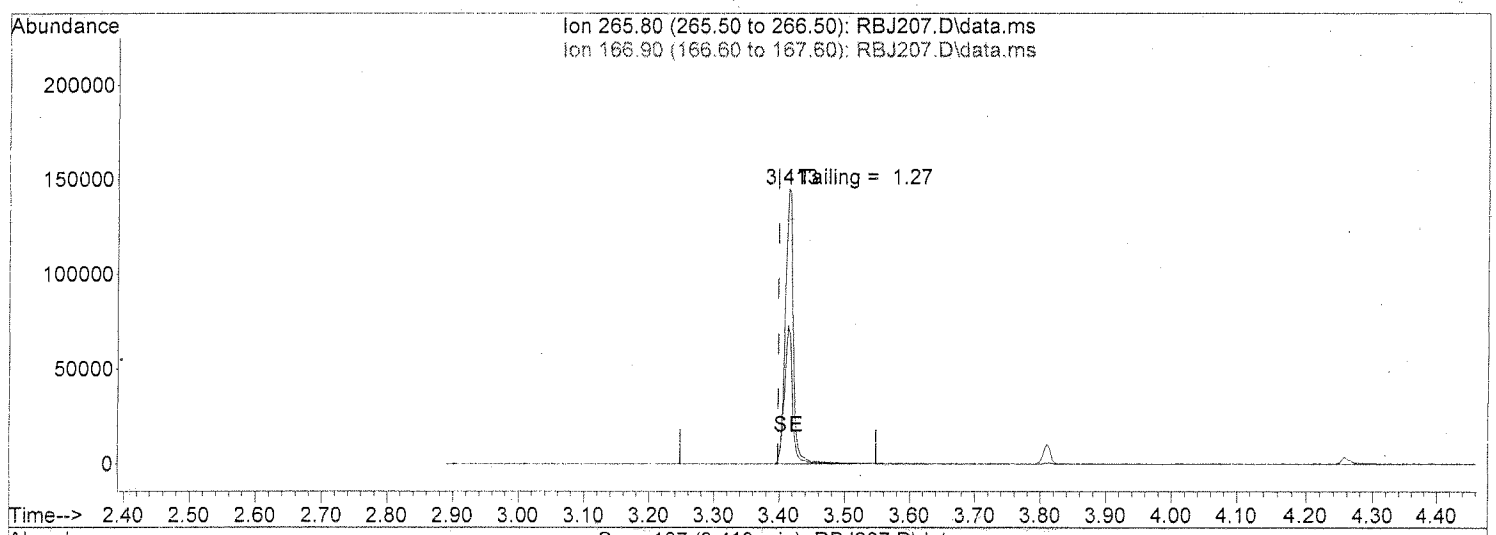
AutoFind: Scans 327, 328, 329; Background Corrected with Scan 319

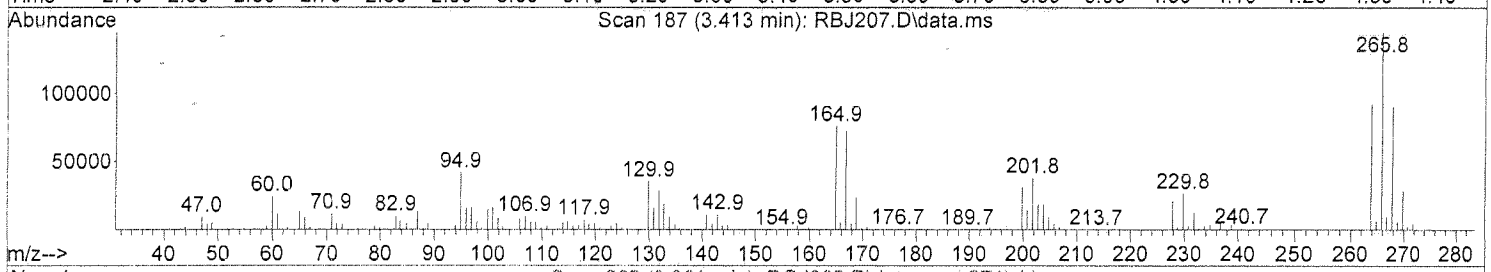
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	45.9	90392	PASS
68	69	0.00	2	1.6	1314	PASS
69	198	0.00	100	41.9	82589	PASS
70	69	0.00	2	0.4	357	PASS
127	198	10	80	50.2	98928	PASS
197	198	0.00	2	0.2	400	PASS
198	198	100	100	100.0	196907	PASS
199	198	5	9	7.2	14079	PASS
275	198	10	60	23.7	46763	PASS
365	198	1	100	2.7	5329	PASS
441	442	0.01	24	14.9	19346	PASS
442	198	50	100	66.2	130267	PASS
443	442	15	24	18.5	24131	PASS

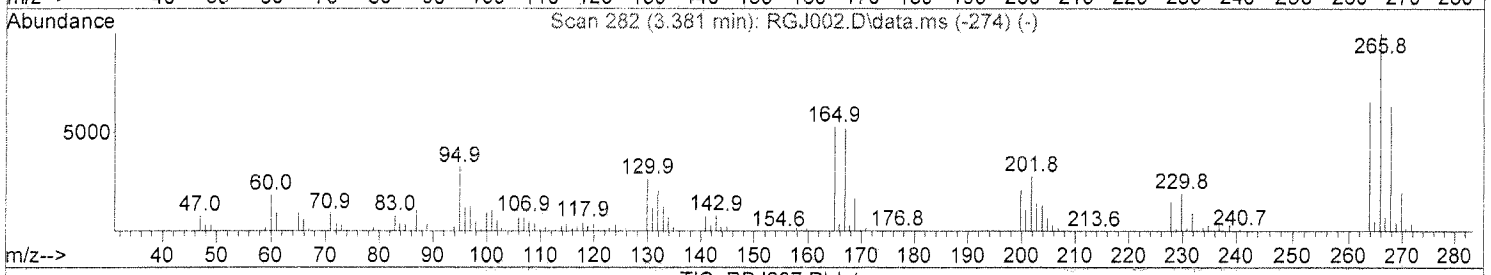
Quantitation Report (Qedit)

Data File : D:\DATA\16B22\RBJ207.D
Acq On : 22 Feb 2016 9:31
Sample : DFTE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 23 08:09:07 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:35 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ207.D\data.ms

(1) Pentachlorophenol (T)

3.413min (+0.014) 67.23 ppm

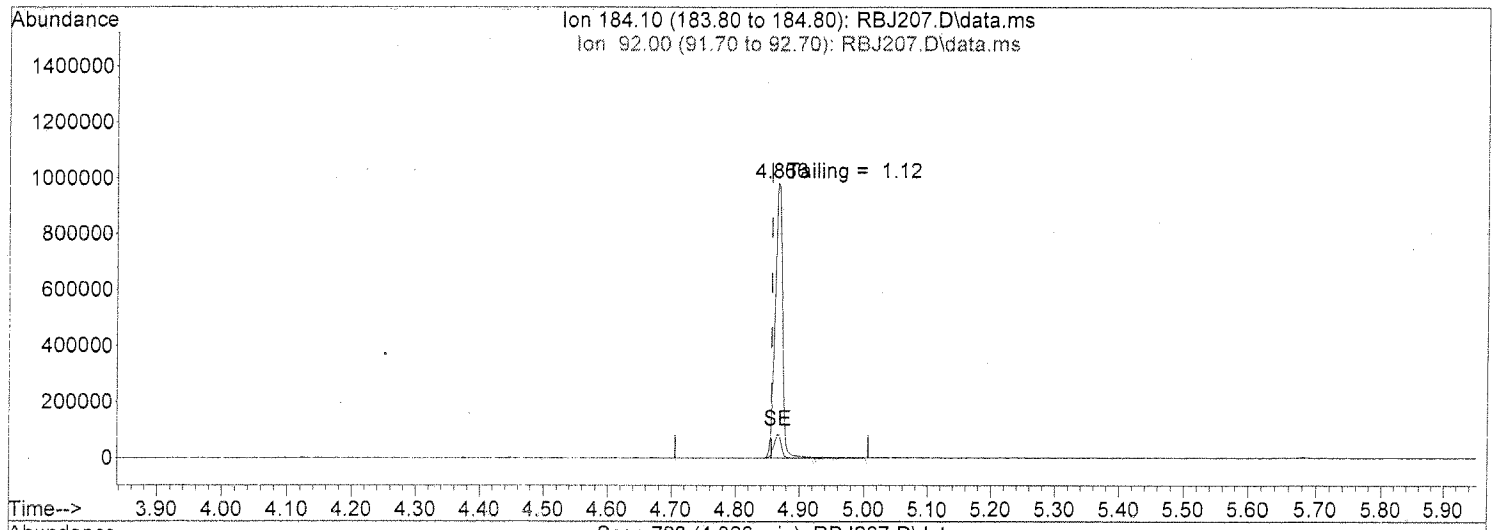
response 122994

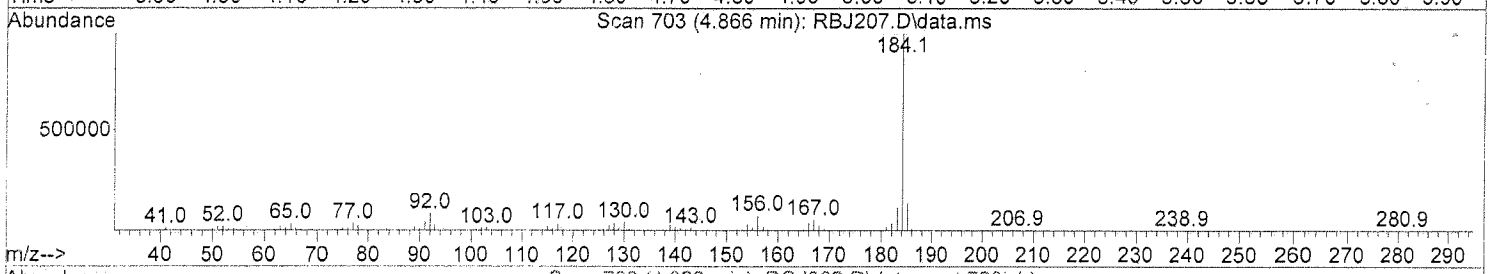
Ion	Exp%	Act%
265.80	100	100
166.90	53.80	48.50
0.00	0.00	0.00
0.00	0.00	0.00

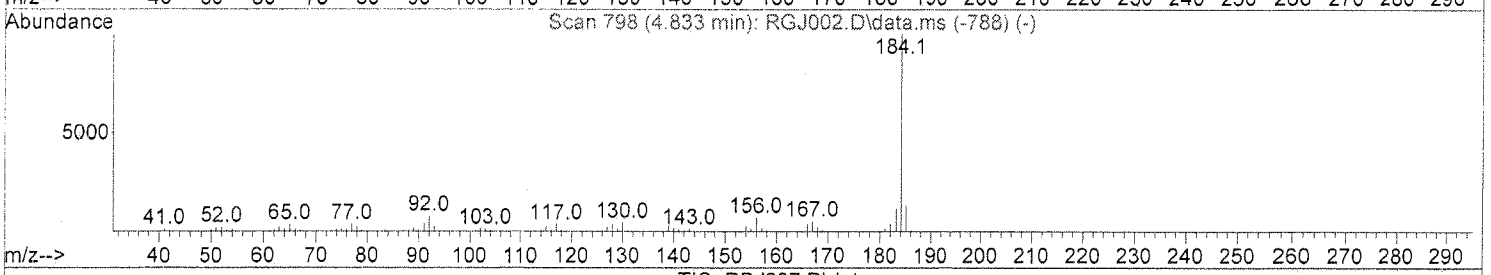
Quantitation Report (Qedit)

Data File : D:\DATA\16B22\RBJ207.D
Acq On : 22 Feb 2016 9:31
Sample : DFTE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 23 08:09:07 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:35 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ207.D\data.ms

(3) Benzidine (T)

4.866min (+0.009) 66.13 ppm

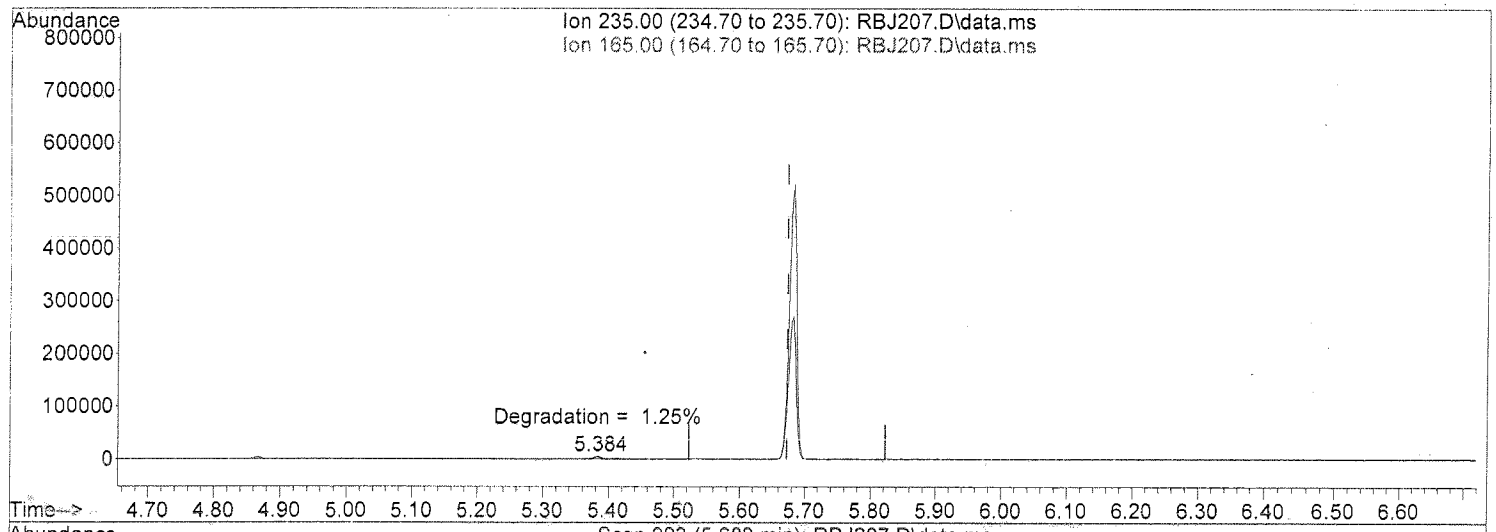
response 818789

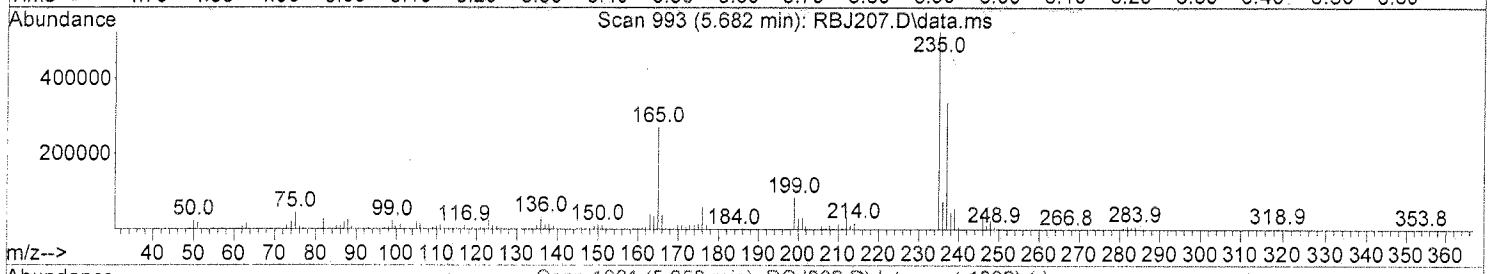
Ion	Exp%	Act%
184.10	100	100
92.00	7.50	8.39
0.00	0.00	0.00
0.00	0.00	0.00

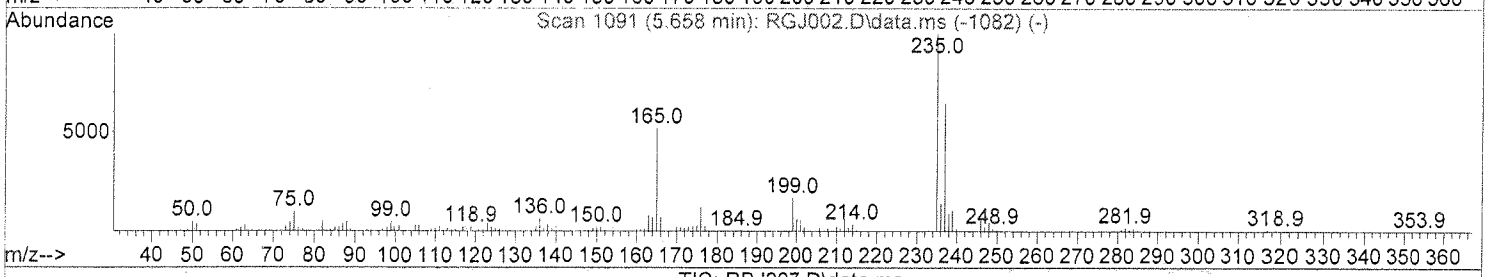
Quantitation Report (Qedit)

Data File : D:\DATA\16B22\RBJ207.D
Acq On : 22 Feb 2016 9:31
Sample : DFTE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 23 08:09:07 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:35 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ207.D\data.ms

(6) DDT (T)

5.682min (+0.009) 71.38 ppm

response 410201

Ion	Exp%	Act%
235.00	100	100
165.00	51.10	52.64
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	125	0.00
2	T	1,4-Dioxane	25.000	22.160	11.4	114	0.00
3	T	N-nitrosodimethylamine	25.000	22.507	10.0	109	0.00
4	T	Pyridine	25.000	23.175	7.3	108	0.00
5	S	2-Fluorophenol	25.000	23.932	4.3	117	0.01
6	S	Phenol-d5	25.000	23.834	4.7	115	0.02
7	C,P	Phenol	25.000	24.024	3.9	117	0.02
8	T	Aniline	25.000	22.878	8.5	111	0.01
9	T,P	bis(2-chloroethyl)ether	25.000	23.185	7.3	112	0.00
10	T,P	2-Chlorophenol	25.000	25.551	-2.2	128	0.02
11	T	1,3-Dichlorobenzene	25.000	23.463	6.1	115	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	0.00
13	C	1,4-Dichlorobenzene	25.000	23.296	6.8	114	0.01
14	T	Benzyl alcohol	25.000	24.157	3.4	118	0.00
15	T	1,2-Dichlorobenzene	25.000	23.203	7.2	113	0.00
16	T,P	2-Methylphenol	25.000	25.414	-1.7	125	0.02
17	T	bis(2-chloroisopropyl)ether	25.000	21.320	14.7	105	0.00
18	T,P	4-Methylphenol	25.000	23.370	6.5	114	0.02
19	P,P	N-Nitroso-di-n-propylamine	25.000	24.354	2.6	121	0.00
20	T,P	Hexachloroethane	25.000	22.935	8.3	111	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	128	0.01
22	S	Nitrobenzene-d5	25.000	22.223	11.1	111	0.00
23	T,P	Nitrobenzene	25.000	21.587	13.7	108	0.00
24	T,P	Isophorone	25.000	22.480	10.1	113	0.00
25	C,P	2-Nitrophenol	25.000	26.819	-7.3	128	0.00
26	T,P	2,4-Dimethylphenol	25.000	22.332	10.7	112	0.01
27	T	Benzoic acid	25.000	23.014	7.9	118	0.03
28	T,P	bis(2-Chloroethoxy)methane	25.000	22.135	11.5	111	0.00
29	T	3,5-Dimethylphenol	25.000	23.452	6.2	113	0.02
30	C,P	2,4-Dichlorophenol	25.000	21.839	12.6	109	0.01
31	T	3,4-Dimethylphenol	25.000	22.484	10.1	112	0.02
32	T	1,2,4-Trichlorobenzene	25.000	21.463	14.1	109	0.00
33	T,P	Naphthalene	25.000	23.490	6.0	119	0.00
34	T	4-Chloroaniline	25.000	23.366	6.5	117	0.00
35	T	2,6-Dichlorophenol	25.000	22.416	10.3	112	0.00
36	C	Hexachlorobutadiene	25.000	20.401	18.4	103	0.01
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	23.580	5.7	117	0.02
39	T,P	2-Methylnaphthalene	25.000	22.841	8.6	115	0.00
40	T	1-Methylnaphthalene	25.000	22.668	9.3	114	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	123	0.00
42	P	Hexachlorocyclopentadiene	25.000	21.386	14.5	104	0.00
43	T	2,3,5-Trichlorophenol	25.000	25.208	-0.8	119	0.02
44	C,P	2,4,6-Trichlorophenol	25.000	22.727	9.1	110	0.02
45	T,P	2,4,5-Trichlorophenol	25.000	23.023	7.9	110	0.02
46	S	2-Fluorobiphenyl	25.000	22.374	10.5	110	0.00
47	T	2,3,4-Trichlorophenol	25.000	23.564	5.7	115	0.02
48	T	Biphenyl	25.000	22.760	9.0	112	0.00
49	T,P	2-Chloronaphthalene	25.000	25.080	-0.3	126	0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	25.092	-0.4	118	0.02
51	T	2,6-Dimethylnaphthalene	25.000	23.016	7.9	112	0.00
52	T	1,4-Dinitrobenzene	25.000	27.401	-9.6	127	0.02
53	T	Dimethylphthalate	25.000	23.699	5.2	116	0.00
54	T	1,3-Dinitrobenzene	25.000	25.511	-2.0	118	0.02
55	T,P	2,6-Dinitrotoluene	25.000	24.958	0.2	120	0.01
56	T	1,2-Dinitrobenzene	25.000	25.714	-2.9	120	0.01
57	T,P	Acenaphthylene	25.000	25.001	-0.0	115	0.01
58	T	3-Nitroaniline	25.000	26.290	-5.2	126	0.02
59	C,P	Acenaphthene	25.000	23.364	6.5	114	0.00
60	P	2,4-Dinitrophenol	25.000	26.861	-7.4	134	0.02
61	P	4-Nitrophenol	25.000	24.064	3.7	113	0.04
62	T,P	2,4-Dinitrotoluene	25.000	25.738	-3.0	120	0.01
63	T,P	Dibenzofuran	25.000	22.910	8.4	112	0.01
64	T	2,3,5,6-Tetrachlorophenol	25.000	23.489	6.0	110	0.02
65	T	2,3,4,6-Tetrachlorophenol	25.000	23.922	4.3	116	0.02
66	T	2,3,5-Trimethylnaphthalene	25.000	23.302	6.8	114	0.00
67	T	Diethylphthalate	25.000	24.223	3.1	117	0.00
68	T,P	Fluorene	25.000	23.537	5.9	115	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	22.310	10.8	110	0.00
70	T	4-Nitroaniline	25.000	28.268	-13.1	130	0.02
71	I	Phenanthrene-d10	40.000	40.000	0.0	125	0.01
72	T	4,6-Dinitro-2-methylphenol	25.000	25.949	-3.8	129	0.02
73	C	N-Nitrosodiphenylamine	25.000	23.195	7.2	115	0.01
74	T	Azobenzene	25.000	22.451	10.2	112	0.00
75	S	2,4,6-Tribromophenol	25.000	26.988	-8.0	129	0.02
76	T,P	4-Bromophenyl-phenylether	25.000	22.473	10.1	113	0.00
77	T,P	Hexachlorobenzene	25.000	23.913	4.3	120	0.01
78	C,P	Pentachlorophenol	25.000	24.323	2.7	114	0.02
79	T	Dibenzothiophene	25.000	22.780	8.9	114	0.01
80	T,P	Phenanthrene	25.000	22.698	9.2	113	0.01
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	23.041	7.8	113	0.01
83	T	Carbazole	25.000	23.834	4.7	119	0.01
84	T	Di-n-butylphthalate	25.000	25.150	-0.6	121	0.00
85	T	1-Methylphenanthrene	25.000	22.919	8.3	113	0.01
86	C,P	Fluoranthene	25.000	22.806	8.8	113	0.01
87	I	Chrysene-d12	40.000	40.000	0.0	130	0.02
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	21.760	13.0	107	0.02
90	S	Terphenyl-d14	25.000	23.064	7.7	118	0.00
91	T	Butylbenzylphthalate	25.000	27.867	-11.5	135	0.00
92	T	bis(2-ethylhexyl)adipate	25.000	28.515	-14.1	139	0.00
93	T	3,3'-Dichlorobenzidine	25.000	26.181	-4.7	131	0.02
94	T,P	Benzo(a)anthracene	25.000	22.907	8.4	118	0.02
95	T,P	Chrysene	25.000	22.478	10.1	116	0.02
96	T	bis(2-Ethylhexyl)phthalate	25.000	25.855	-3.4	129	0.00
97	I	Perylene-d12	40.000	40.000	0.0	129	0.03

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	28.425	-13.7	138	0.00
99	T,P	Benzo(b)fluoranthene	25.000	25.042	-0.2	124	0.02
100	T,P	Benzo(k)fluoranthene	25.000	22.189	11.2	117	0.02
101	T	Benzo(e)pyrene	25.000	23.458	6.2	119	0.03
102	C,P	Benzo(a)pyrene	25.000	24.102	3.6	123	0.03
103	T	Perylene	25.000	23.206	7.2	119	0.03
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	24.718	1.1	125	0.05
105	T,P	Dibenzo(a,h)anthracene	25.000	24.779	0.9	124	0.05
106	T,P	Benzo(g,h,i)perylene	25.000	23.940	4.2	122	0.06

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

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	125	0.00
2	T	1,4-Dioxane	0.599	0.531	11.4	114	0.00
3	T	N-nitrosodimethylamine	0.850	0.765	10.0	109	0.00
4	T	Pyridine	1.529	1.418	7.3	108	0.00
5	S	2-Fluorophenol	1.314	1.258	4.3	117	0.01
6	S	Phenol-d5	1.623	1.547	4.7	115	0.02
7	C,P	Phenol	1.682	1.616	3.9	117	0.02
8	T	Aniline	2.140	1.958	8.5	111	0.01
9	T,P	bis(2-chloroethyl)ether	1.275	1.182	7.3	112	0.00
10	T,P	2-Chlorophenol	1.419	1.450	-2.2	128	0.02
11	T	1,3-Dichlorobenzene	1.654	1.553	6.1	115	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	0.00
13	C	1,4-Dichlorobenzene	1.680	1.565	6.8	114	0.01
14	T	Benzyl alcohol	0.912	0.881	3.4	118	0.00
15	T	1,2-Dichlorobenzene	1.604	1.489	7.2	113	0.00
16	T,P	2-Methylphenol	1.148	1.167	-1.7	125	0.02
17	T	bis(2-chloroisopropyl)ether	2.655	2.264	14.7	105	0.00
18	T,P	4-Methylphenol	1.521	1.422	6.5	114	0.02
19	P,P	N-Nitroso-di-n-propylamine	1.064	1.037	2.5	121	0.00
20	T,P	Hexachloroethane	0.642	0.589	8.3	111	0.00
21	I	Naphthalene-d8	1.000	1.000	0.0	128	0.01
22	S	Nitrobenzene-d5	0.451	0.401	11.1	111	0.00
23	T,P	Nitrobenzene	0.453	0.391	13.7	108	0.00
24	T,P	Isophorone	0.868	0.781	10.0	113	0.00
25	C,P	2-Nitrophenol	0.183	0.196	-7.1	128	0.00
26	T,P	2,4-Dimethylphenol	0.420	0.375	10.7	112	0.01
27	T	Benzoic acid	0.243	0.234	3.7	118	0.03
28	T,P	bis(2-Chloroethoxy)methane	0.454	0.402	11.5	111	0.00
29	T	3,5-Dimethylphenol	0.453	0.425	6.2	113	0.02
30	C,P	2,4-Dichlorophenol	0.356	0.311	12.6	109	0.01
31	T	3,4-Dimethylphenol	0.495	0.445	10.1	112	0.02
32	T	1,2,4-Trichlorobenzene	0.406	0.349	14.0	109	0.00
33	T,P	Naphthalene	1.115	1.047	6.1	119	0.00
34	T	4-Chloroaniline	0.475	0.444	6.5	117	0.00
35	T	2,6-Dichlorophenol	0.337	0.302	10.4	112	0.00
36	C	Hexachlorobutadiene	0.271	0.222	18.1	103	0.01
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.338	0.318	5.9	117	0.02
39	T,P	2-Methylnaphthalene	0.784	0.716	8.7	115	0.00
40	T	1-Methylnaphthalene	0.687	0.623	9.3	114	0.00
41	I	Acenaphthene-d10	1.000	1.000	0.0	123	0.00
42	P	Hexachlorocyclopentadiene	0.502	0.430	14.3	104	0.00
43	T	2,3,5-Trichlorophenol	0.428	0.431	-0.7	119	0.02
44	C,P	2,4,6-Trichlorophenol	0.455	0.414	9.0	110	0.02
45	T,P	2,4,5-Trichlorophenol	0.478	0.441	7.7	110	0.02
46	S	2-Fluorobiphenyl	1.598	1.430	10.5	110	0.00
47	T	2,3,4-Trichlorophenol	0.419	0.395	5.7	115	0.02
48	T	Biphenyl	1.629	1.483	9.0	112	0.00
49	T,P	2-Chloronaphthalene	1.340	1.344	-0.3	126	0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.378	0.379	-0.3	118	0.02
51	T	2,6-Dimethylnaphthalene	1.154	1.062	8.0	112	0.00
52	T	1,4-Dinitrobenzene	0.166	0.182	-9.6	127	0.02
53	T	Dimethylphthalate	1.473	1.396	5.2	116	0.00
54	T	1,3-Dinitrobenzene	0.197	0.201	-2.0	118	0.02
55	T,P	2,6-Dinitrotoluene	0.301	0.301	0.0	120	0.01
56	T	1,2-Dinitrobenzene	0.127	0.131	-3.1	120	0.01
57	T,P	Acenaphthylene	2.122	2.122	0.0	115	0.01
58	T	3-Nitroaniline	0.315	0.331	-5.1	126	0.02
59	C,P	Acenaphthene	1.328	1.241	6.6	114	0.00
60	P	2,4-Dinitrophenol	0.116	0.144	-24.1#	134	0.02
61	P	4-Nitrophenol	0.206	0.199	3.4	113	0.04
62	T,P	2,4-Dinitrotoluene	0.392	0.403	-2.8	120	0.01
63	T,P	Dibenzofuran	1.886	1.728	8.4	112	0.01
64	T	2,3,5,6-Tetrachlorophenol	0.312	0.294	5.8	110	0.02
65	T	2,3,4,6-Tetrachlorophenol	0.430	0.411	4.4	116	0.02
66	T	2,3,5-Trimethylnaphthalene	1.080	1.006	6.9	114	0.00
67	T	Diethylphthalate	1.492	1.446	3.1	117	0.00
68	T,P	Fluorene	1.469	1.383	5.9	115	0.00
69	T,P	4-Chlorophenyl-phenylether	0.748	0.668	10.7	110	0.00
70	T	4-Nitroaniline	0.324	0.366	-13.0	130	0.02
71	I	Phenanthrene-d10	1.000	1.000	0.0	125	0.01
72	T	4,6-Dinitro-2-methylphenol	0.112	0.129	-15.2	129	0.02
73	C	N-Nitrosodiphenylamine	0.683	0.634	7.2	115	0.01
74	T	Azobenzene	0.802	0.720	10.2	112	0.00
75	S	2,4,6-Tribromophenol	0.096	0.104	-8.3	129	0.02
76	T,P	4-Bromophenyl-phenylether	0.240	0.216	10.0	113	0.00
77	T,P	Hexachlorobenzene	0.244	0.234	4.1	120	0.01
78	C,P	Pentachlorophenol	0.140	0.136	2.9	114	0.02
79	T	Dibenzothiophene	1.234	1.124	8.9	114	0.01
80	T,P	Phenanthrene	1.255	1.139	9.2	113	0.01
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.264	1.165	7.8	113	0.01
83	T	Carbazole	1.074	1.024	4.7	119	0.01
84	T	Di-n-butylphthalate	1.302	1.310	-0.6	121	0.00
85	T	1-Methylphenanthrene	0.890	0.816	8.3	113	0.01
86	C,P	Fluoranthene	1.414	1.290	8.8	113	0.01
87	I	Chrysene-d12	1.000	1.000	0.0	130	0.02
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.368	1.190	13.0	107	0.02
90	S	Terphenyl-d14	0.856	0.790	7.7	118	0.00
91	T	Butylbenzylphthalate	0.464	0.517	-11.4	135	0.00
92	T	bis(2-ethylhexyl)adipate	0.381	0.435	-14.2	139	0.00
93	T	3,3'-Dichlorobenzidine	0.412	0.432	-4.9	131	0.02
94	T,P	Benzo(a)anthracene	1.236	1.132	8.4	118	0.02
95	T,P	Chrysene	1.142	1.027	10.1	116	0.02
96	T	bis(2-Ethylhexyl)phthalate	0.716	0.740	-3.4	129	0.00
97	I	Perylene-d12	1.000	1.000	0.0	129	0.03

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.359	1.545	-13.7	138	0.00
99	T,P	Benzo(b)fluoranthene	1.283	1.285	-0.2	124	0.02
100	T,P	Benzo(k)fluoranthene	1.293	1.147	11.3	117	0.02
101	T	Benzo(e)pyrene	1.184	1.111	6.2	119	0.03
102	C,P	Benzo(a)pyrene	1.218	1.174	3.6	123	0.03
103	T	Perylene	1.222	1.135	7.1	119	0.03
104	T,P	Indeno(1,2,3-cd)pyrene	1.349	1.333	1.2	125	0.05
105	T,P	Dibenzo(a,h)anthracene	1.124	1.114	0.9	124	0.05
106	T,P	Benzo(g,h,i)perylene	1.159	1.110	4.2	122	0.06

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

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.025	152	528088	40.00	ppm	0.00
21) Naphthalene-d8	4.258	136	1962818	40.00	ppm	0.01
41) Acenaphthene-d10	6.284	164	1144905	40.00	ppm	0.00
71) Phenanthrene-d10	8.023	188	2111950	40.00	ppm	0.01
87) Chrysene-d12	10.810	240	2405604	40.00	ppm	0.02
97) Perylene-d12	12.246	264	2072006	40.00	ppm	0.03
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	415101	23.93	ppm	0.01
Spiked Amount 30.000			Recovery = 79.77%			
6) Phenol-d5	2.680	99	510599	23.83	ppm	0.02
Spiked Amount 30.000			Recovery = 79.43%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.519	82	492216	22.22	ppm	0.00
Spiked Amount 10.000			Recovery = 222.20%			
46) 2-Fluorobiphenyl	5.476	172	1023401	22.37	ppm	0.00
Spiked Amount 10.000			Recovery = 223.70%			
75) 2,4,6-Tribromophenol	7.229	330	136981	26.99	ppm	0.02
Spiked Amount 30.000			Recovery = 89.97%			
90) Terphenyl-d14	9.725	244	1187724	23.06	ppm	0.00
Spiked Amount 10.000			Recovery = 230.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	175256	22.16	ppm	95
3) N-nitrosodimethylamine	1.481	74	252634	22.51	ppm	86
4) Pyridine	1.510	79	467922	23.18	ppm	95
7) Phenol	2.691	94	533387	24.02	ppm	93
8) Aniline	2.753	93	646268	22.88	ppm	99
9) bis(2-chloroethyl)ether	2.779	93	390152	23.18	ppm	99
10) 2-Chlorophenol	2.852	128	478661	25.55	ppm	87
11) 1,3-Dichlorobenzene	2.977	146	512484	23.46	ppm	99
13) 1,4-Dichlorobenzene	3.039	146	516682	23.30	ppm	99
14) Benzyl alcohol	3.121	108	290900	24.16	ppm	91
15) 1,2-Dichlorobenzene	3.174	146	491399	23.20	ppm	100
16) 2-Methylphenol	3.202	107	385101	25.41	ppm	99
17) bis(2-chloroisopropyl)...	3.236	45	747197	21.32	ppm	99
18) 4-Methylphenol	3.341	107	469226	23.37	ppm	90
19) N-Nitroso-di-n-propyla...	3.356	70	342205	24.35	ppm	93
20) Hexachloroethane	3.480	117	194300	22.94	ppm	99
23) Nitrobenzene	3.538	77	480057	21.59	ppm	94
24) Isophorone	3.768	82	957828	22.48	ppm	97
25) 2-Nitrophenol	3.849	139	240661	26.82	ppm	70
26) 2,4-Dimethylphenol	3.869	107	460225	22.33	ppm	98
27) Benzoic acid	3.964	105	287123	23.01	ppm	97
28) bis(2-Chloroethoxy)met...	3.969	93	493218	22.14	ppm	98
29) 3,5-Dimethylphenol	4.012	107	521286	23.45	ppm	100
30) 2,4-Dichlorophenol	4.094	162	381405	21.84	ppm	99
31) 3,4-Dimethylphenol	4.191	107	545582	22.48	ppm	96
32) 1,2,4-Trichlorobenzene	4.191	180	428065	21.46	ppm	99
33) Naphthalene	4.278	128	1284660	23.49	ppm	100
34) 4-Chloroaniline	4.326	127	544273	23.37	ppm	100
35) 2,6-Dichlorophenol	4.336	162	370400	22.42	ppm	99
36) Hexachlorobutadiene	4.403	225	271758	20.40	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.861	107	390689	23.58	ppm	93
39)	2-Methylnaphthalene	5.048	142	878958	22.84	ppm	100
40)	1-Methylnaphthalene	5.163	142	763733	22.67	ppm	100
42)	Hexachlorocyclopentadiene	5.225	237	307392	21.39	ppm	100
43)	2,3,5-Trichlorophenol	5.244	196	308576	25.21	ppm	96
44)	2,4,6-Trichlorophenol	5.374	196	295910	22.73	ppm	100
45)	2,4,5-Trichlorophenol	5.418	196	315318	23.02	ppm	97
47)	2,3,4-Trichlorophenol	5.490	196	282817	23.56	ppm	99
48)	Biphenyl	5.596	154	1061184	22.76	ppm	99
49)	2-Chloronaphthalene	5.620	162	961931	25.08	ppm	94
50)	2-Nitroaniline	5.740	65	271391	25.09	ppm	95
51)	2,6-Dimethylnaphthalene	5.778	156	760083	23.02	ppm	89
52)	1,4-Dinitrobenzene	5.908	168	130098	27.40	ppm	91
53)	Dimethylphthalate	5.961	163	999036	23.70	ppm	100
54)	1,3-Dinitrobenzene	6.000	168	143487	25.51	ppm	78
55)	2,6-Dinitrotoluene	6.034	165	215158	24.96	ppm	94
56)	1,2-Dinitrobenzene	6.096	168	93390	25.71	ppm	96
57)	Acenaphthylene	6.116	152	1518305	25.00	ppm	99
58)	3-Nitroaniline	6.236	138	237027	26.29	ppm	91
59)	Acenaphthene	6.322	153	888003	23.36	ppm	99
60)	2,4-Dinitrophenol	6.360	184	102907	26.86	ppm	96
61)	4-Nitrophenol	6.451	109	142045	24.06	ppm	87
62)	2,4-Dinitrotoluene	6.518	165	288515	25.74	ppm	94
63)	Dibenzofuran	6.533	168	1236626	22.91	ppm	100
64)	2,3,5,6-Tetrachlorophenol	6.629	230	210047	23.49	ppm	95
65)	2,3,4,6-Tetrachlorophenol	6.681	232	294290	23.92	ppm	97
66)	2,3,5-Trimethylnaphtha...	6.786	170	720036	23.30	ppm	99
67)	Diethylphthalate	6.818	149	1034633	24.22	ppm	99
68)	Fluorene	6.945	166	989418	23.54	ppm	100
69)	4-Chlorophenyl-phenyle...	6.945	204	477784	22.31	ppm	99
70)	4-Nitroaniline	6.973	138	262161	28.27	ppm	96
72)	4,6-Dinitro-2-methylph...	7.011	198	170887	25.95	ppm	94
73)	N-Nitrosodiphenylamine	7.091	169	837068	23.20	ppm	100
74)	Azobenzene	7.134	77	950543	22.45	ppm	99
76)	4-Bromophenyl-phenylether	7.518	248	284966	22.47	ppm	99
77)	Hexachlorobenzene	7.579	284	308562	23.91	ppm	99
78)	Pentachlorophenol	7.811	266	179434	24.32	ppm	97
79)	Dibenzothiophene	7.905	184	1484147	22.78	ppm	94
80)	Phenanthrene	8.046	178	1503854	22.70	ppm	99
82)	Anthracene	8.103	178	1537659	23.04	ppm	100
83)	Carbazole	8.281	167	1351586	23.83	ppm	100
84)	Di-n-butylphthalate	8.664	149	1729139	25.15	ppm	100
85)	1-Methylphenanthrene	8.717	192	1076865	22.92	ppm	100
86)	Fluoranthene	9.325	202	1702741	22.81	ppm	96
89)	Pyrene	9.566	202	1789843	21.76	ppm	94
91)	Butylbenzylphthalate	10.222	149	777169	27.87	ppm	98
92)	bis(2-ethylhexyl)adipate	10.299	129	654081	28.52	ppm	90
93)	3,3'-Dichlorobenzidine	10.766	252	648781	26.18	ppm	99
94)	Benzo(a)anthracene	10.796	228	1702423	22.91	ppm	88
95)	Chrysene	10.835	228	1544274	22.48	ppm	99
96)	bis(2-Ethylhexyl)phtha...	10.801	149	1113296	25.85	ppm	99
98)	Di-n-octylphthalate	11.421	149	2000687	28.43	ppm	100
99)	Benzo(b)fluoranthene	11.835	252	1664030	25.04	ppm	97
100)	Benzo(k)fluoranthene	11.864	252	1485750	22.19	ppm	97
101)	Benzo(e)pyrene	12.125	252	1438547	23.46	ppm	96

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

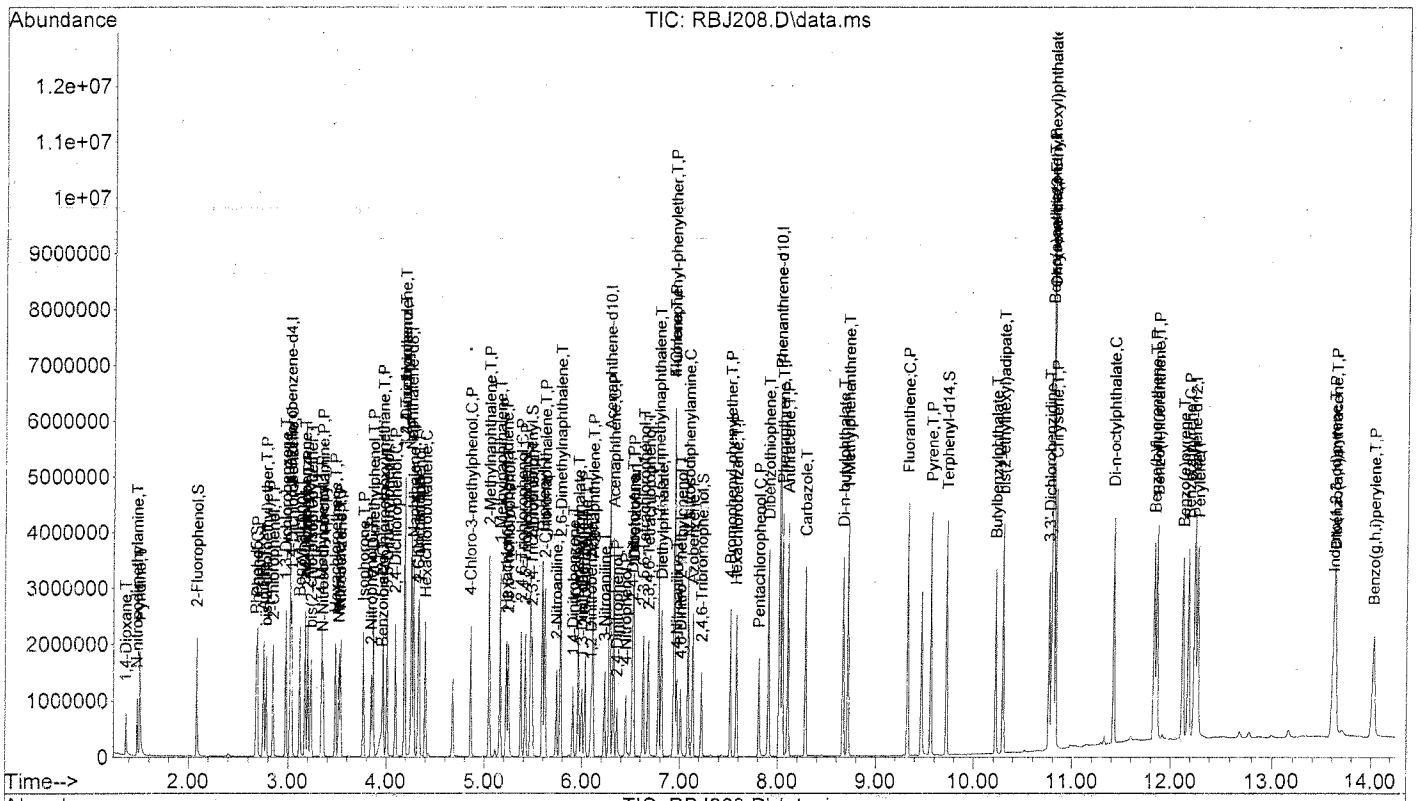
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	12.183	252	1520565	24.10	ppm	96
103) Perylene	12.280	252	1469253	23.21	ppm	96
104) Indeno(1,2,3-cd)pyrene	13.616	276	1726853	24.72	ppm	95
105) Dibenzo(a,h)anthracene	13.636	278	1442185	24.78	ppm	96
106) Benzo(g,h,i)perylene	14.028	276	1437608	23.94	ppm	96

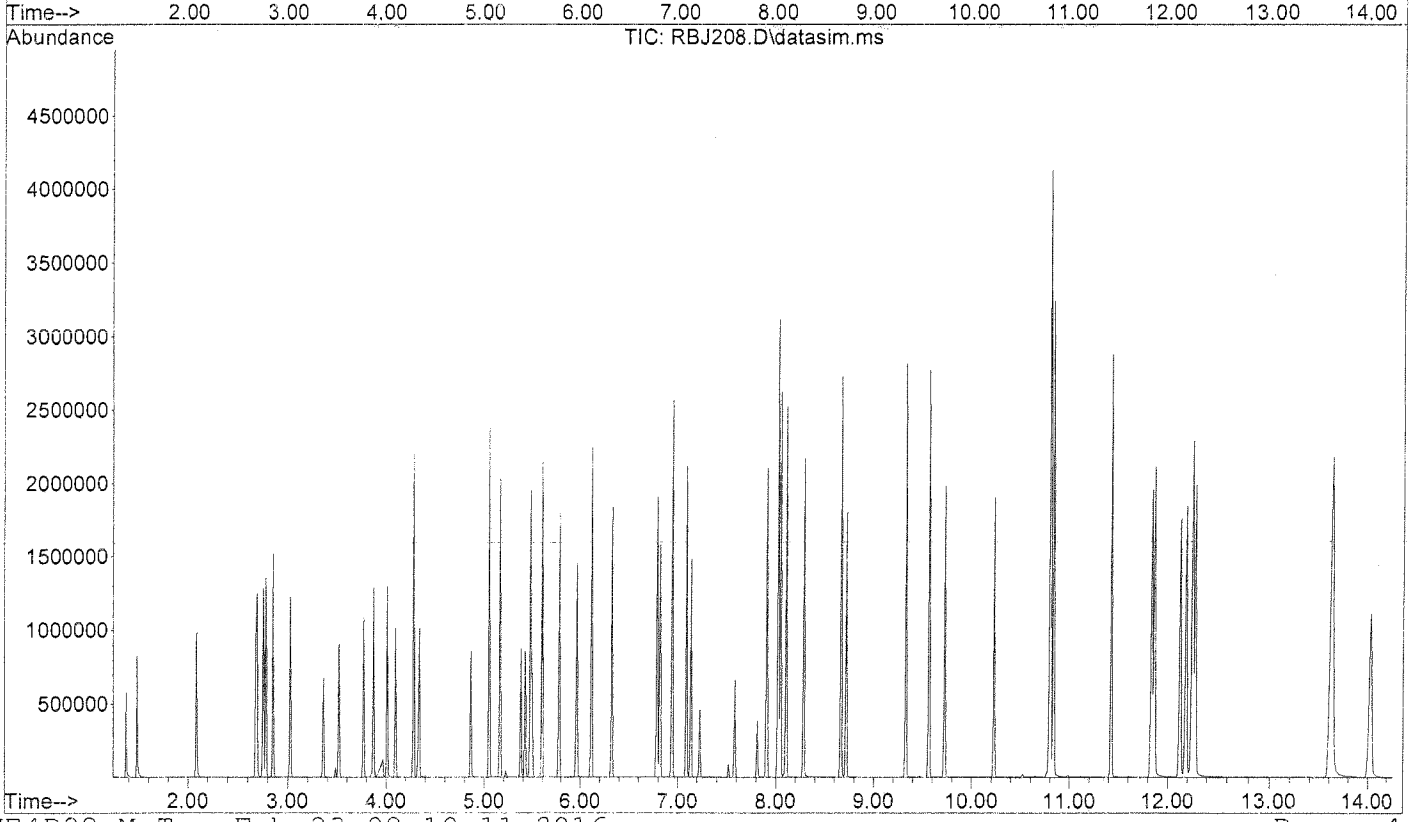
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00





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ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AE4-019

Method File: SVE4B02S Tune File: DFTPP Start Date/Time: 2/2/16 8:58 End Date/Time: 2/2/16 18:46

ANALYTICAL BATCH: SVE4B02S

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RBJ001	IBE4B0201	1			
	2	DFTE4B0201				
	3	SVE4B021				100 ppm 8270
	4	2				80
	5	3				50
	6	4				40
	7	5				25
	8	6				20
	9	7				10
	10	8				4
	11	9				2
	12	10				0.5
	13	11				0.15
	14	12				0.075
	15	13				0.05
	16	ISVE4B021				ICV *
	17	SVE4B02A1	1			100 ppm Ben
	18	2				80
	19	3				50
	20	4				40
	21	5				25
	22	6				10
	23	7				4
	24	ISVE4B02A1				ICV
	25	SVE4B02C1	1			140 ppm Add
	26	2				120
	27	3				100
	28	4				80
	29	5				50
	30	6				40
	31	7				20
	32	ISVE4B02C1				ICV

Instrument No:	E4
INITIAL CALIBRATION REFERENCE	
Date	2/2/16
ICAL ID	SVE4B02/02A/02C/02S

Standards

Name	ID	Conc. (mg/L)
DFTPP	SS2C-14-17-03	50
INT. STD.	SS2B-12-12-03	2000
ICV 8270	SS2C-14-17-02	25
DCC /ICAL	SS2C-14-16-01	.05-50
BENZIDINE ICAL	SS2C-14-16-02	4-100
APP 9 Add ICV	SS2C-14-21-01	50
APP 9 ADD ICAL	SS2C-14-20-03	20-140
8270 ICAL	SS2C-14-16-03	80-100
Ben ICV	SS2C-14-17-01	25
Solvent	ID	
CH_2Cl_2	55219	
DATA FILE	16B02	

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE4	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments: * 2,4-Dinitrophenol low

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. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AE4-019

Method File: SVE4B02S Tune File: DFTPP Start Date/Time: 2/2/16 8:58 End Date/Time: 2/2/16 18:45

ANALYTICAL BATCH: SVE4B02S

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RBJ 033	ISVE4B022	1			ICV 8270
	~~034~~					
		KV 2/3/16				

Instrument No:	E4
INITIAL CALIBRATION REFERENCE	
Date	2/2/16
ICAL ID	SVE4B02/02S

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.		
ICV 8270	SS2C - 14-17-02	25
DCC		
BENZIDINE		
APP 9		
APP 9 ADD		

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16B02

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE4	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

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. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE4-019

Method File: SVE4B02S Tune File: DFTPP Start Date/Time: 2/22/16 9:31 End Date/Time: 2/22/16 15:51

ANALYTICAL BATCH: CSVE4B0209

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RBJ206	IBE4B0209				
	207	CSV DFTE4B0209				KV 2/22/16
	208	CSVE4B0209				
	209	CSVE4B02A09				Ben
SVB01SW	210	SVB018WB	1		X	
	211	WL				
	212	WC				
	213	TXB005SB				
	214	16B121-01				
	215	16B094-02				
	216	16B113-02				
	217	03				
	218	16B116-02				
	219	16B123-04	5			Bad yellow Solution
	220	16B094-03	5			
SVB0205	221	SVB020SB	1	X		
	222	SL				
	223	SC				
	224	16B145-05				
	225	16B146-05				
	226	CSVE4B0210				
						KV 2/23/16

Instrument No:	E4
INITIAL CALIBRATION REFERENCE	
Date	2/2/16
ICAL ID	SVE4B02/02A/02S
Standards	
Name	ID	Conc. (mg/L)
DFTPP	SS2C-14-17-03	50
INT. STD.	SS2B-12-12-03	2000
ICV		
DCC	SS2C-14-20-01	25
BENZIDINE	02	
APP 9		
APP 9 ADD		
Solvent	ID	
CH_2Cl_2	SS219	
DATA FILE	16B22	
Electronic Data Archival		
Location	Date	
HPCHEM_SVOA/TOE4		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 2/23/16

Disposed By: KV

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.

☑ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

2/1 Thu JM

Book #: ESV-089
Preparation Batch: SVB018 W
Matrix: WATER / TCLP EXTRACT
Micropipette ID: 200µl: PE97 A-01
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2A-13-01-13	0.4
LCS/MS ~~full list~~ #	SS2A-13-01-14	0.2
LCS/MS 3comp #	SS2B-12-15-02	0.2
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	151090508
Na_2SO_4	VWIB-003-07-21
H_2SO_4	311 3122
NaOH	SPIB-08-52-02
Silica Sand	
Silica Gel	
Reagent Water	VWIB-005-16-02
Residual Chlorine Strip	5190
pH Strip	HC573149
Filter Paper	9685320B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVB018WB			1
WL	#4		1
WC	#4		1
B121-01			5
TXB005SB			1
B094-02			1
-03			3
B113-02			2
-03			2
B116-02			2
B123-04			3

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4		
5	35	35
6		
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: TW
Standard Added By: JM — Checked By: ML
Extract Received By: KV 2/19/16 — Location: PE21-11
Disposed By: — Disposed On:

FileID: SVB018W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVB018W01	SVB018WB	1000	ml	2/17/16 14:55	2	1000	2	1	
16SVB018W02	SVB018WL	1000	ml	2/17/16 14:55	2	1000	2	1	FULL LIST + 3COMP
16SVB018W03	SVB018WC	1000	ml	2/17/16 14:55	2	1000	2	1	FULL LIST + 3COMP
16SVB018W04	B121-01	1000	ml	2/17/16 14:55	2	1000	2	1	Sparkletts QC water((SW1A-005-16-12)
16SVB018W05	TXB005SB	100	ml	2/17/16 14:55	2	1000	2	10	TCLP EXTRACT
16SVB018W06	B094-02	100	ml	2/17/16 14:56	2	1000	2	10	TCLP EXTRACT
16SVB018W07	B094-03	850	ml	2/17/16 14:56	2	1000	2	1.18	milky light yellow w/ bubbles,Ph9,brown
16SVB018W08	B113-02	940	ml	2/17/16 14:56	2	1000	2	1.06	light yellow
16SVB018W09	B113-03	930	ml	2/17/16 14:56	2	1000	2	1.08	
16SVB018W10	B116-02	860	ml	2/17/16 14:56	2	1000	2	1.16	yellow
16SVB018W11	B123-04	1000	ml	2/17/16 14:56	2	1000	2	1	dirty brown,stinky

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 2/17/16 14:30 ☑ pHAdj(≤2) @ 2/17/16 14:30 Prepared By: JMuert

☑ Extraction Ended @ 2/19/16 8:00 ☑ pHAdj(≥11) @ 2/18/16 13:56 Checked By: ML

Comments: volume entered after extraction started,cl not detected,pH 5-9. Date 2/19/16

SOP EMAX-3520 Rev. 5

TCLP SEMI VOLATILE ORGANICS

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/22/16 12:16
Lab Samp ID:	B094-02	Dilution Factor:	10
Lab File ID:	RBJ215	Matrix :	LEACHATE
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	100	25	50
2,4,6-TRICHLOROPHENOL	ND	100	25	50
2,4-DINITROTOLUENE	ND	100	25	50
2-METHYLPHENOL	ND	100	25	50
4-METHYLPHENOL (1)	ND	100	25	50
HEXACHLOROBENZENE	ND	100	25	50
HEXACHLOROBUTADIENE	ND	100	25	50
HEXACHLOROETHANE	ND	100	25	50
NITROBENZENE	ND	100	25	50
PENTACHLOROPHENOL	ND	200	25	50
PYRIDINE	ND	400	110	200

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	508	600.0	84.6	40-125
2-FLUOROBIPHENYL	157	200.0	78.7	50-110
2-FLUOROPHENOL	351	600.0	58.5	20-110
NITROBENZENE-D5	140	200.0	70.1	40-110
PHENOL-D5	428	600.0	71.4	10-115
TERPHENYL-D14	164	200.0	82.0	50-135

(1): Cannot be separated from 3-Methylphenol
DateTime Leached: 02/16/16 17:30

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ215.D
Acq On : 22 Feb 2016 12:16
Sample : 16B094-02
Misc :
Integrator: RTE
Quant Time: Feb 23 08:21:24 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

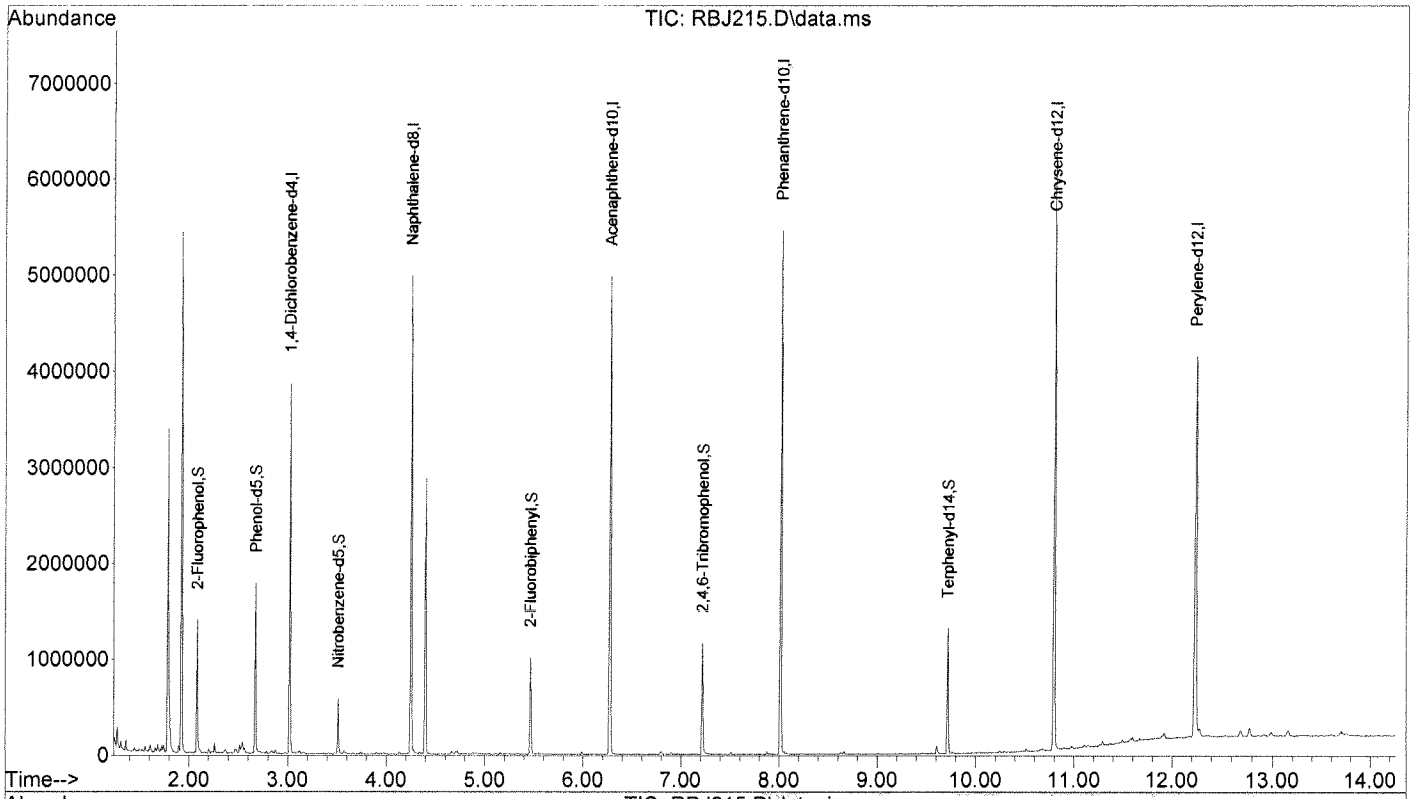
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	499415	40.00	ppm	0.00
21) Naphthalene-d8	4.253	136	1853000	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	1056051	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1845640	40.00	ppm	0.00
87) Chrysene-d12	10.801	240	1995094	40.00	ppm	0.00
97) Perylene-d12	12.237	264	1838631	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	288083	17.56	ppm	0.01
Spiked Amount 30.000			Recovery	=	58.53%	
6) Phenol-d5	2.675	99	433894	21.42	ppm	0.02
Spiked Amount 30.000			Recovery	=	71.40%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.514	82	146525	7.01	ppm	0.00
Spiked Amount 10.000			Recovery	=	70.10%	
46) 2-Fluorobiphenyl	5.466	172	332167	7.87	ppm	0.00
Spiked Amount 10.000			Recovery	=	78.70%	
75) 2,4,6-Tribromophenol	7.219	330	112633	25.39	ppm	0.00
Spiked Amount 30.000			Recovery	=	84.63%	
90) Terphenyl-d14	9.720	244	350295	8.20	ppm	0.00
Spiked Amount 10.000			Recovery	=	82.00%	
Target Compounds						Qvalue

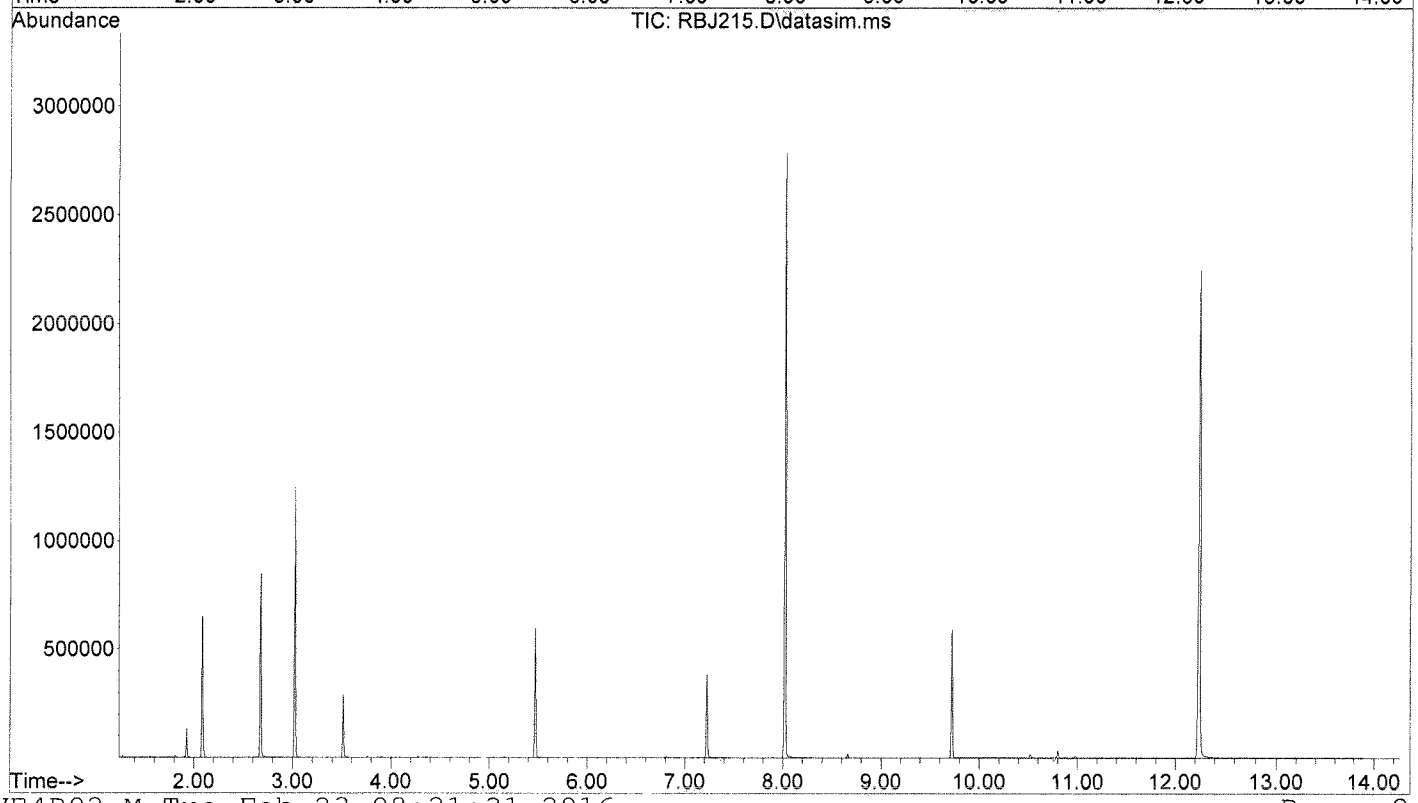
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ215.D
Acq On : 22 Feb 2016 12:16
Sample : 16B094-02
Misc :
Integrator: RTE
Quant Time: Feb 23 08:21:24 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00





QC SUMMARIES

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	MBLK2W	Date Analyzed:	02/22/16 11:38
Lab Samp ID:	TXB005SB	Dilution Factor:	10
Lab File ID:	RBJ213	Matrix :	LEACHATE
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	100	25	50
2,4,6-TRICHLOROPHENOL	ND	100	25	50
2,4-DINITROTOLUENE	ND	100	25	50
2-METHYLPHENOL	ND	100	25	50
4-METHYLPHENOL (1)	ND	100	25	50
HEXACHLOROBENZENE	ND	100	25	50
HEXACHLOROBUTADIENE	ND	100	25	50
HEXACHLOROETHANE	ND	100	25	50
NITROBENZENE	ND	100	25	50
PENTACHLOROPHENOL	ND	200	25	50
PYRIDINE	ND	400	110	200

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	514	600.0	85.7	40-125
2-FLUOROBIPHENYL	161	200.0	80.4	50-110
2-FLUOROPHENOL	378	600.0	63.1	20-110
NITROBENZENE-D5	144	200.0	71.9	40-110
PHENOL-D5	447	600.0	74.6	10-115
TERPHENYL-D14	169	200.0	84.6	50-135

(1): Cannot be separated from 3-Methylphenol
DateTime Leached: 02/16/16 17:30

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 14:30
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 10:39
Lab Samp ID:	SVB018WB	Dilution Factor:	1
Lab File ID:	RBJ210	Matrix :	WATER
Ext Btch ID:	SVB018W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4,6-TRICHLOROPHENOL	ND	10	2.5	5.0
2,4-DINITROTOLUENE	ND	10	2.5	5.0
2-METHYLPHENOL	ND	10	2.5	5.0
4-METHYLPHENOL (1)	ND	10	2.5	5.0
HEXACHLOROBENZENE	ND	10	2.5	5.0
HEXACHLOROBUTADIENE	ND	10	2.5	5.0
HEXACHLOROETHANE	ND	10	2.5	5.0
NITROBENZENE	ND	10	2.5	5.0
PENTACHLOROPHENOL	ND	20	2.5	5.0
PYRIDINE	ND	40	11	20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	52.6	60.00	87.7	40-125
2-FLUOROBIPHENYL	16.7	20.00	83.3	50-110
2-FLUOROPHENOL	37.8	60.00	63.1	20-110
NITROBENZENE-D5	14.6	20.00	73.1	40-110
PHENOL-D5	45.3	60.00	75.5	10-115
TERPHENYL-D14	15.6	20.00	78.2	50-135

(1): Cannot be separated from 3-Methylphenol

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3520C/8270D

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVB018WB	SVB018WL	SVB018WC		
LAB FILE ID:	RBJ210	RBJ211	RBJ212		
DATE EXTRACTED:	02/17/1614:30	02/17/1614:30	02/17/1614:30	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1610:39	02/22/1610:59	02/22/1611:18	DATE RECEIVED:	02/17/16
PREP. BATCH:	SVB018W	SVB018W	SVB018W		
CALIB. REF:	RBJ007	RBJ007	RBJ007		

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 (%)
2,4,5-Trichlorophenol	ND	40.0	27.2	68	40.0	29.4	73	7	50-110	30
2,4,6-Trichlorophenol	ND	40.0	26.2	66	40.0	29.5	74	12	50-115	30
2,4-Dinitrotoluene	ND	40.0	34.3	86	40.0	35.5	89	3	50-120	30
2-Methylphenol	ND	40.0	27.5	69	40.0	31.3	78	13	40-110	30
4-Methylphenol	ND	40.0	28.3	71	40.0	34.7	87	20	30-110	30
Hexachlorobenzene	ND	40.0	32.6	82	40.0	36.2	91	10	50-110	30
Hexachlorobutadiene	ND	40.0	25.4	64	40.0	26.4	66	4	25-105	30
Hexachloroethane	ND	40.0	28.1	70	40.0	29.6	74	5	30-100	30
Nitrobenzene	ND	40.0	27.6	69	40.0	28.5	71	3	45-110	30
Pentachlorophenol	ND	40.0	32.3	81	40.0	34.2	86	6	40-115	30
Pyridine	ND	80.0	44.7	56	80.0	49.1	61	9	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 (%)
2,4,6-Tribromophenol	60.0	48.5	81	60.0	55.1	92	40-125
2-Fluorobiphenyl	20.0	12.8	64	20.0	13.9	70	50-110
2-Fluorophenol	60.0	27.5	46	60.0	35.9	60	20-110
Nitrobenzene-d5	20.0	12.8	64	20.0	13.9	69	40-110
Phenol-d5	60.0	36.2	60	60.0	43.7	73	10-115
Terphenyl-d14	20.0	14.3	71	20.0	15.8	79	50-135

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ213.D
Acq On : 22 Feb 2016 11:38
Sample : TXB005SB
Misc :
Integrator: RTE
Quant Time: Feb 23 08:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	475233	40.00	ppm	0.00
21) Naphthalene-d8	4.254	136	1786003	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	1020404	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1802874	40.00	ppm	0.00
87) Chrysene-d12	10.801	240	1963078	40.00	ppm	0.00
97) Perylene-d12	12.242	264	1773709	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	295377	18.92	ppm	0.01
Spiked Amount 30.000			Recovery = 63.07%			
6) Phenol-d5	2.675	99	431243	22.37	ppm	0.02
Spiked Amount 30.000			Recovery = 74.57%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.514	82	144991	7.19	ppm	0.00
Spiked Amount 10.000			Recovery = 71.90%			
46) 2-Fluorobiphenyl	5.471	172	327558	8.04	ppm	0.00
Spiked Amount 10.000			Recovery = 80.40%			
75) 2,4,6-Tribromophenol	7.224	330	111373	25.70	ppm	0.01
Spiked Amount 30.000			Recovery = 85.67%			
90) Terphenyl-d14	9.720	244	355676	8.46	ppm	0.00
Spiked Amount 10.000			Recovery = 84.60%			
Target Compounds						Qvalue

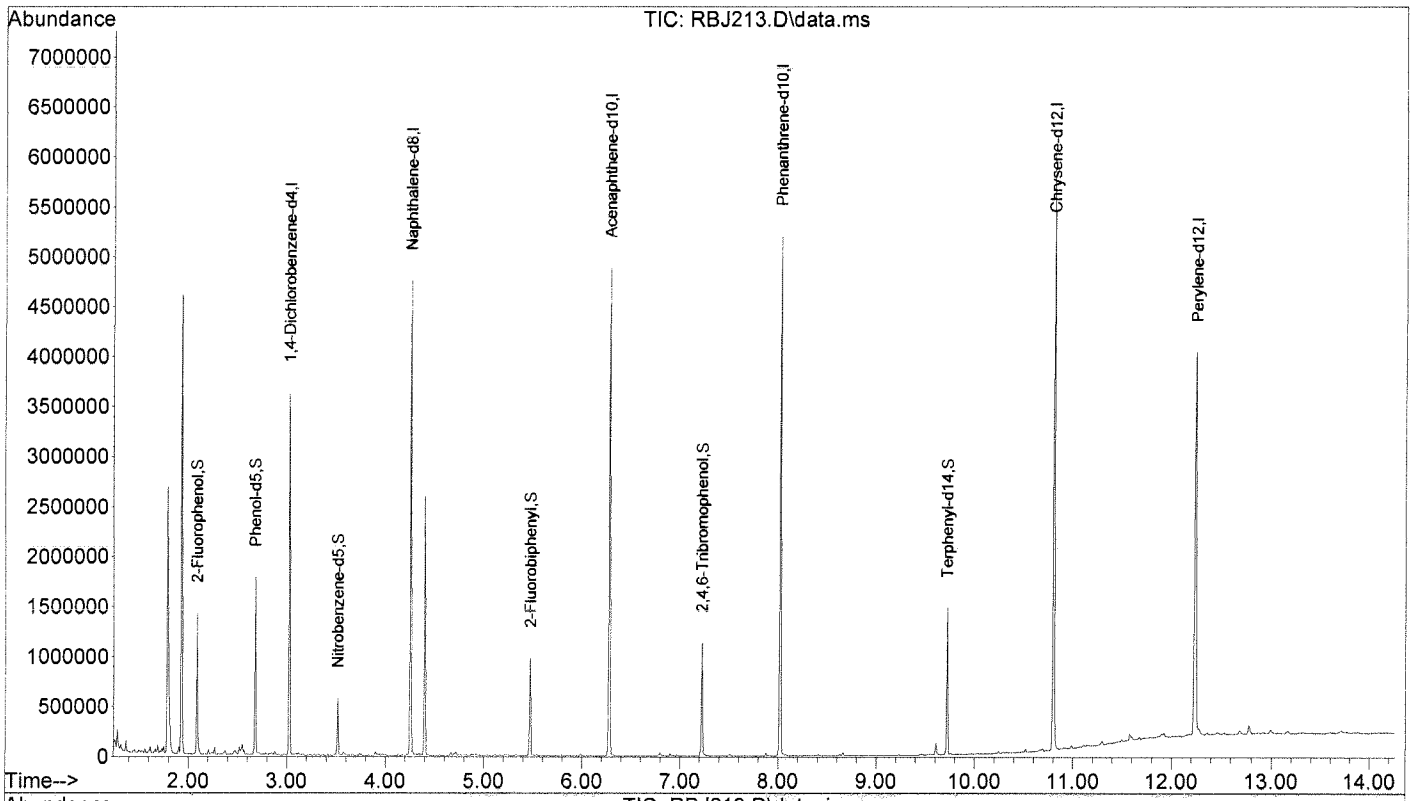
(#) = qualifier out of range (m) = manual integration (+) = signals summed

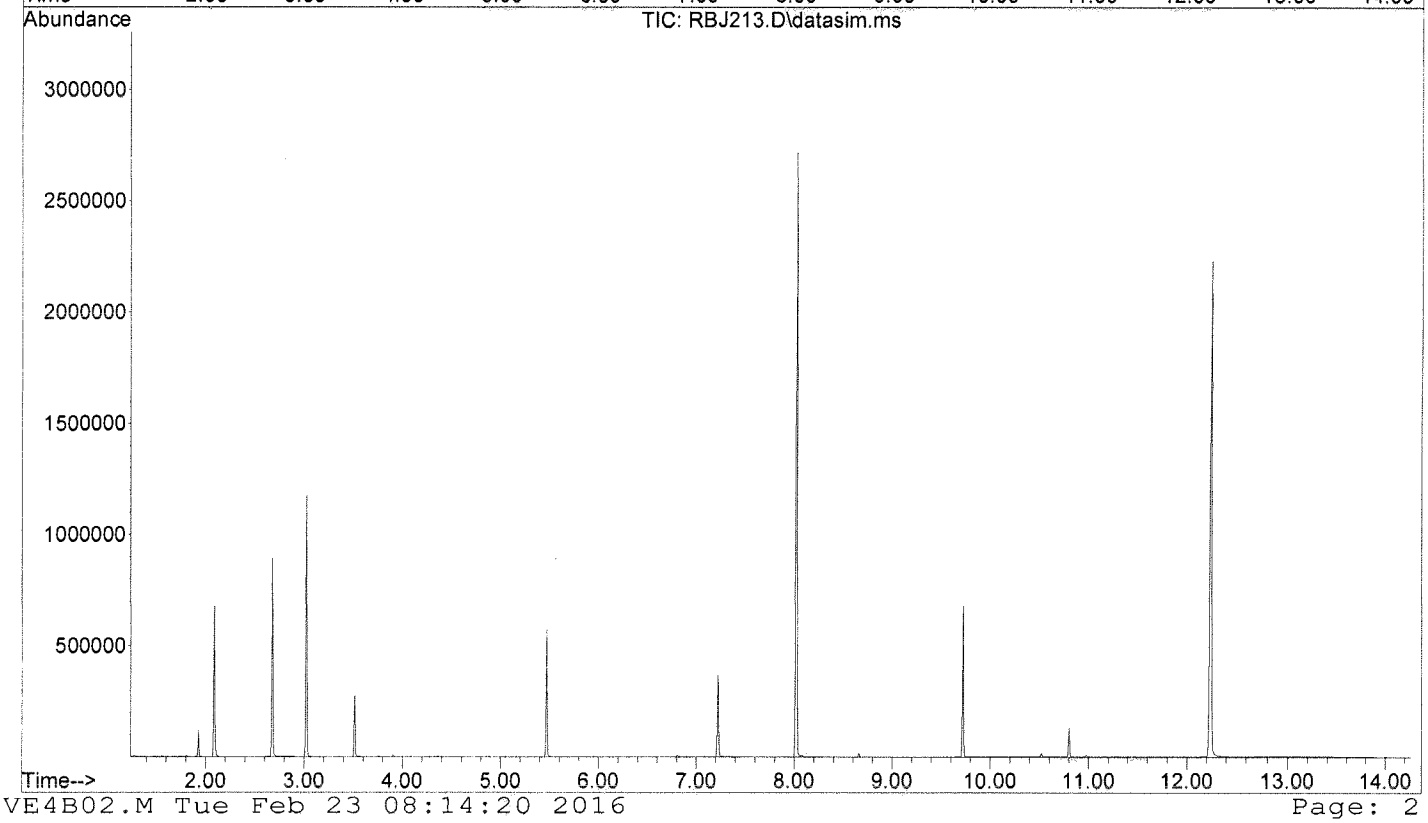
514

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ213.D
Acq On : 22 Feb 2016 11:38
Sample : TXB005SB
Misc :
Integrator: RTE
Quant Time: Feb 23 08:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00





Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ210.D
Acq On : 22 Feb 2016 10:39
Sample : SVB018WB
Misc :
Integrator: RTE
Quant Time: Feb 23 08:11:12 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

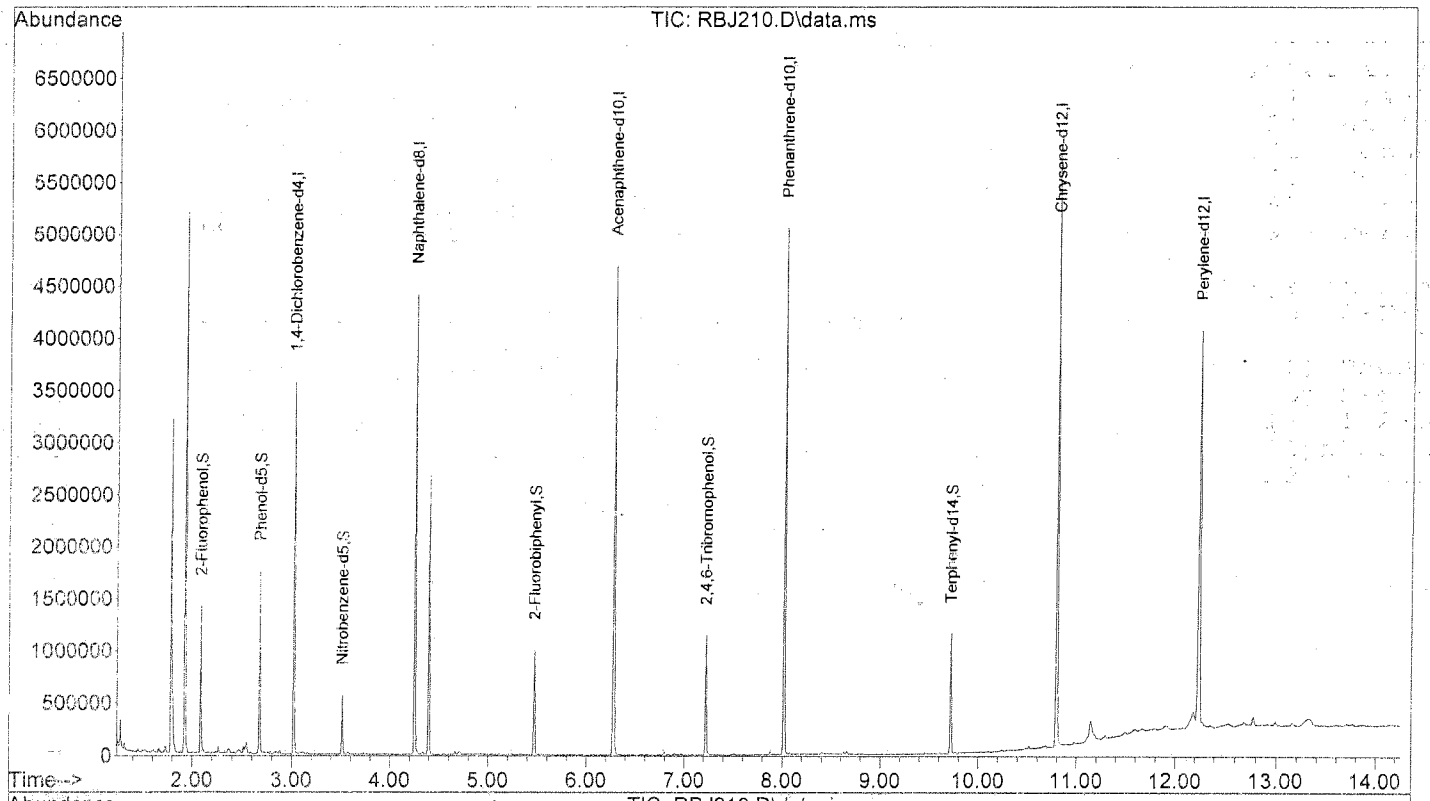
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	454567	40.00	ppm	0.00
21) Naphthalene-d8	4.254	136	1707237	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	963841	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1729833	40.00	ppm	0.00
87) Chrysene-d12	10.801	240	1866739	40.00	ppm	0.00
97) Perylene-d12	12.242	264	1698046	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	282466	18.92	ppm	0.01
Spiked Amount 30.000			Recovery =	63.07%		
6) Phenol-d5	2.675	99	417560	22.64	ppm	0.02
Spiked Amount 30.000			Recovery =	75.47%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.514	82	140815	7.31	ppm	0.00
Spiked Amount 10.000			Recovery =	73.10%		
46) 2-Fluorobiphenyl	5.471	172	320631	8.33	ppm	0.00
Spiked Amount 10.000			Recovery =	83.30%		
75) 2,4,6-Tribromophenol	7.224	330	109427	26.32	ppm	0.01
Spiked Amount 30.000			Recovery =	87.73%		
90) Terphenyl-d14	9.720	244	312444	7.82	ppm	0.00
Spiked Amount 10.000			Recovery =	78.20%		
Target Compounds						Qvalue

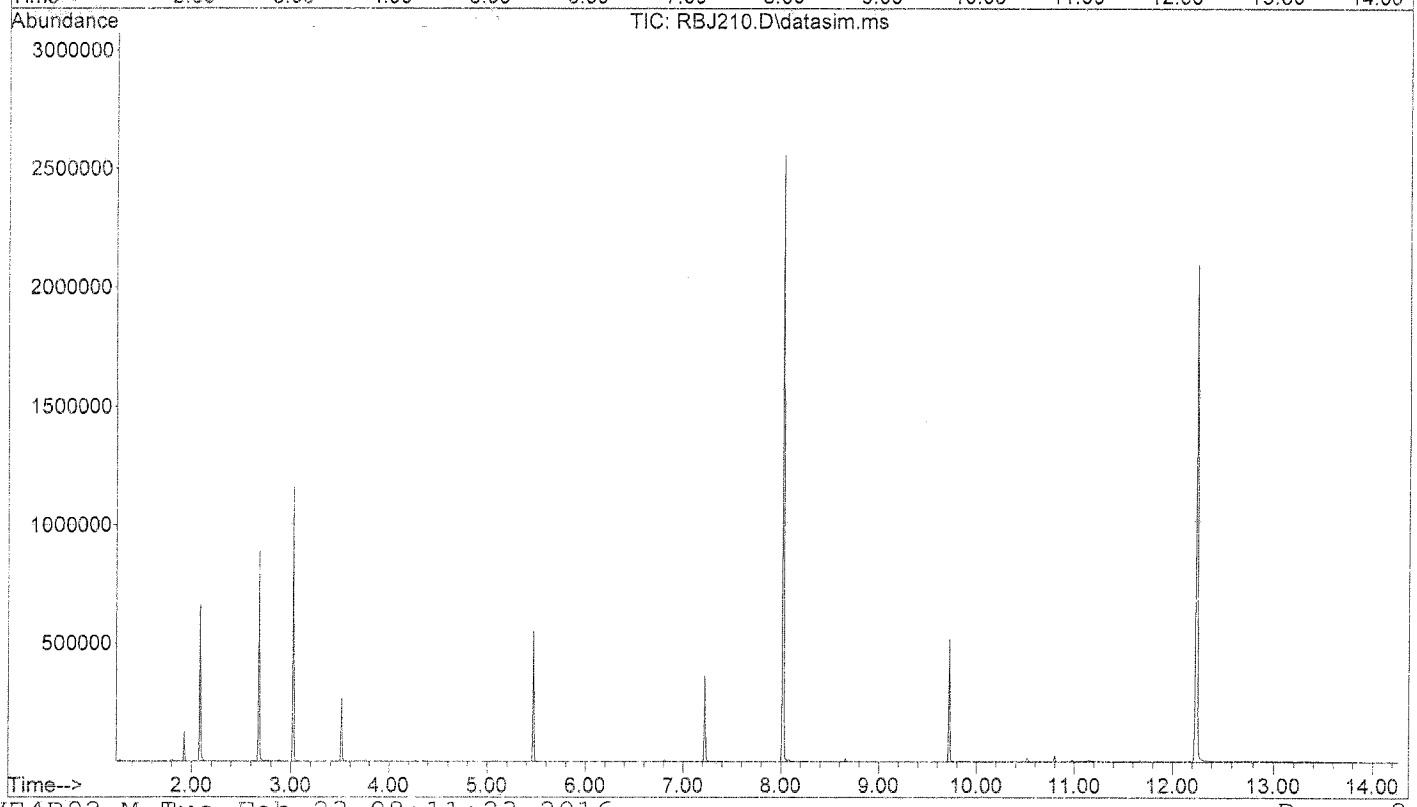
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ210.D
Acq On : 22 Feb 2016 10:39
Sample : SVB018WB
Misc :
Integrator: RTE
Quant Time: Feb 23 08:11:12 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00





Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ211.D
Acq On : 22 Feb 2016 10:59
Sample : SVB018WL
Misc :
Integrator: RTE
Quant Time: Feb 23 08:12:09 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.025	152	533212	40.00	ppm	0.00
21) Naphthalene-d8	4.253	136	1972392	40.00	ppm	0.00
41) Acenaphthene-d10	6.284	164	1136664	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	2057969	40.00	ppm	0.00
87) Chrysene-d12	10.806	240	2339403	40.00	ppm	0.02
97) Perylene-d12	12.247	264	2142971	40.00	ppm	0.03
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	241192	13.77	ppm	0.01
Spiked Amount 30.000			Recovery =	45.90%		
6) Phenol-d5	2.675	99	391797	18.11	ppm	0.02
Spiked Amount 30.000			Recovery =	60.37%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.514	82	142551	6.40	ppm	0.00
Spiked Amount 10.000			Recovery =	64.00%		
46) 2-Fluorobiphenyl	5.471	172	290820	6.40	ppm	0.00
Spiked Amount 10.000			Recovery =	64.00%		
75) 2,4,6-Tribromophenol	7.224	330	119870	24.24	ppm	0.01
Spiked Amount 30.000			Recovery =	80.80%		
90) Terphenyl-d14	9.720	244	358013	7.15	ppm	0.00
Spiked Amount 10.000			Recovery =	71.50%		
Target Compounds						Qvalue
3) N-nitrosodimethylamine	1.481	74	156191	13.78	ppm	86
4) Pyridine	1.510	79	455980	22.37	ppm	94
7) Phenol	2.685	94	283279	12.64	ppm	93
8) Aniline	2.748	93	386494	13.55	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	243556	14.33	ppm	99
10) 2-Chlorophenol	2.847	128	246275	13.02	ppm	88
11) 1,3-Dichlorobenzene	2.977	146	309079	14.01	ppm	100
13) 1,4-Dichlorobenzene	3.039	146	324581	14.49	ppm	98
14) Benzyl alcohol	3.116	108	191163	15.72	ppm	90
15) 1,2-Dichlorobenzene	3.174	146	300981	14.08	ppm	98
16) 2-Methylphenol	3.198	107	210061	13.73	ppm	90
17) bis(2-chloroisopropyl)...	3.231	45	469916	13.28	ppm	99
18) 4-Methylphenol	3.337	107	287296	14.17	ppm	93
19) N-Nitroso-di-n-propyla...	3.351	70	199674	14.07	ppm	94
20) Hexachloroethane	3.480	117	120362	14.07	ppm	96
23) Nitrobenzene	3.533	77	308075	13.79	ppm	94
24) Isophorone	3.763	82	601299	14.04	ppm	97
25) 2-Nitrophenol	3.845	139	132954	14.74	ppm	71
26) 2,4-Dimethylphenol	3.869	107	272798	13.17	ppm	98
27) Benzoic acid	3.969	105	344477	27.10	ppm	98
28) bis(2-Chloroethoxy)met...	3.969	93	323543	14.45	ppm	97
29) 3,5-Dimethylphenol	4.008	107	315487	14.12	ppm	98
30) 2,4-Dichlorophenol	4.094	162	219221	12.49	ppm	99
31) 3,4-Dimethylphenol	4.186	107	347038	14.23	ppm	95
32) 1,2,4-Trichlorobenzene	4.186	180	281824	14.06	ppm	99
33) Naphthalene	4.278	128	833888	15.17	ppm	100
34) 4-Chloroaniline	4.326	127	324409	13.86	ppm	100
35) 2,6-Dichlorophenol	4.336	162	220752	13.29	ppm	99
36) Hexachlorobutadiene	4.398	225	170192	12.71	ppm	100
38) 4-Chloro-3-methylphenol	4.856	107	233414	14.02	ppm	93

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ211.D
Acq On : 22 Feb 2016 10:59
Sample : SVB018WL
Misc :
Integrator: RTE
Quant Time: Feb 23 08:12:09 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

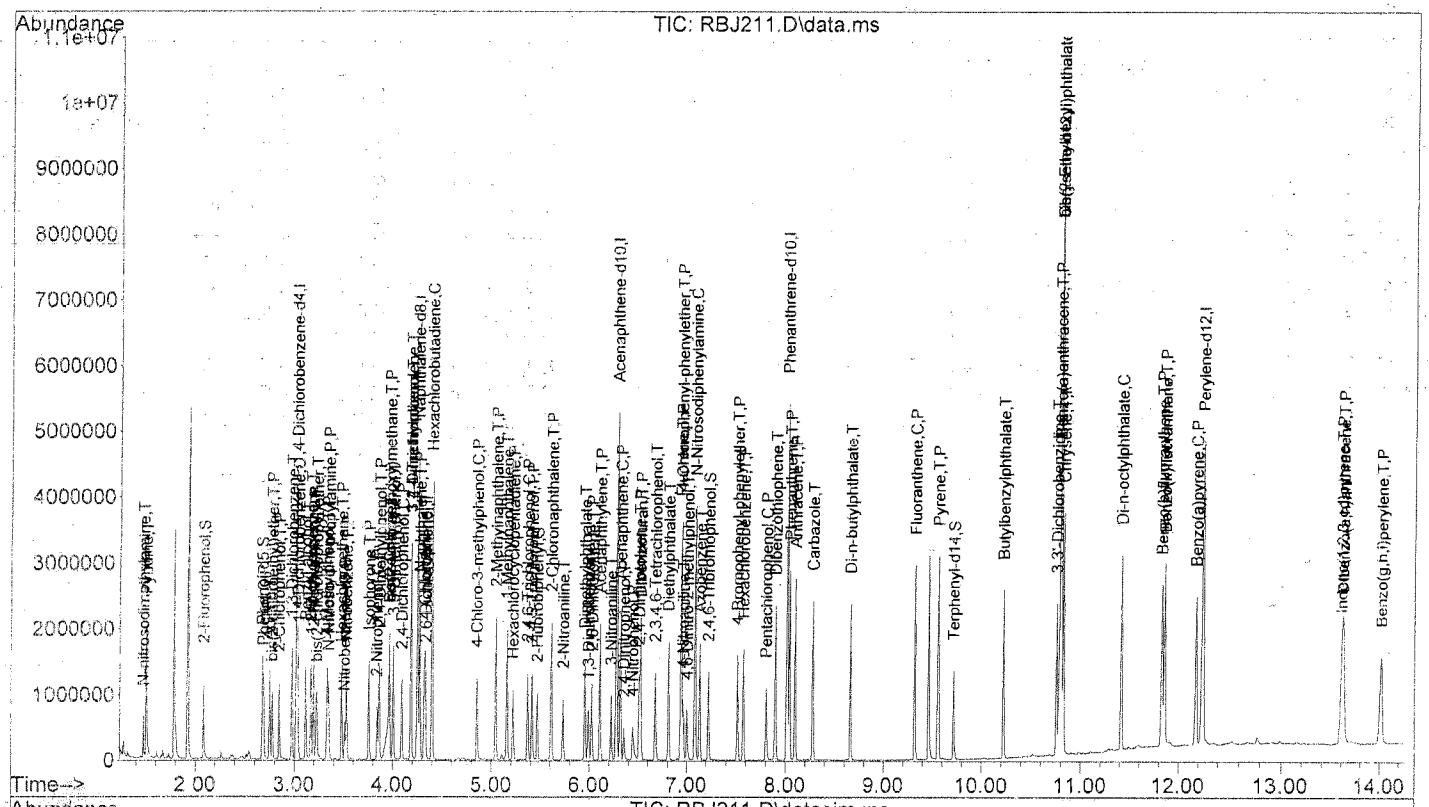
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
39)	2-Methylnaphthalene	5.048	142	542782	14.04	ppm	99
40)	1-Methylnaphthalene	5.158	142	505106	14.92	ppm	99
42)	Hexachlorocyclopentadiene	5.220	237	154633	10.84	ppm	99
44)	2,4,6-Trichlorophenol	5.370	196	169469	13.11	ppm	100
45)	2,4,5-Trichlorophenol	5.413	196	185236	13.62	ppm	89
49)	2-Chloronaphthalene	5.615	162	625238	16.42	ppm	99
50)	2-Nitroaniline	5.735	65	165221	15.39	ppm	96
53)	Dimethylphthalate	5.956	163	629841	15.05	ppm	100
54)	1,3-Dinitrobenzene	5.995	168	84844	15.19	ppm	79
55)	2,6-Dinitrotoluene	6.029	165	138645	16.20	ppm	94
57)	Acenaphthylene	6.111	152	942655	15.63	ppm	100
58)	3-Nitroaniline	6.226	138	148213	16.56	ppm	92
59)	Acenaphthene	6.322	153	564550	14.96	ppm	99
60)	2,4-Dinitrophenol	6.356	184	57290	16.25	ppm	97
61)	4-Nitrophenol	6.447	109	90696	15.48	ppm	87
62)	2,4-Dinitrotoluene	6.514	165	190932	17.16	ppm	94
63)	Dibenzofuran	6.528	168	778671	14.53	ppm	100
65)	2,3,4,6-Tetrachlorophenol	6.677	232	173913	14.24	ppm	100
67)	Diethylphthalate	6.814	149	676450	15.95	ppm	100
68)	Fluorene	6.940	166	609167	14.60	ppm	100
69)	4-Chlorophenyl-phenyle...	6.945	204	306601	14.42	ppm	99
70)	4-Nitroaniline	6.964	138	171831	18.66	ppm	96
72)	4,6-Dinitro-2-methylph...	7.006	198	110869	18.01	ppm	96
73)	N-Nitrosodiphenylamine	7.086	169	521733	14.84	ppm	99
74)	Azobenzene	7.134	77	612754	14.85	ppm	99
76)	4-Bromophenyl-phenylether	7.513	248	185049	14.98	ppm	99
77)	Hexachlorobenzene	7.579	284	205083	16.31	ppm	98
78)	Pentachlorophenol	7.806	266	116106	16.15	ppm	95
79)	Dibenzothiophene	7.900	184	973403	15.33	ppm	94
80)	Phenanthrene	8.046	178	976909	15.13	ppm	100
82)	Anthracene	8.103	178	997105	15.33	ppm	100
83)	Carbazole	8.281	167	905375	16.38	ppm	100
84)	Di-n-butylphthalate	8.664	149	1180252	17.62	ppm	100
86)	Fluoranthene	9.326	202	1172285	16.11	ppm	95
89)	Pyrene	9.562	202	1240154	15.50	ppm	93
91)	Butylbenzylphthalate	10.223	149	539616	19.90	ppm	99
93)	3,3'-Dichlorobenzidine	10.762	252	437142	18.14	ppm	99
94)	Benzo(a)anthracene	10.791	228	1172141	16.22	ppm	87
95)	Chrysene	10.830	228	1113520	16.67	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.801	149	794513	18.97	ppm	100
98)	Di-n-octylphthalate	11.422	149	1393108	19.14	ppm	100
99)	Benzo(b)fluoranthene	11.830	252	1089170	15.85	ppm	93
100)	Benzo(k)fluoranthene	11.859	252	1076735	15.55	ppm	97
102)	Benzo(a)pyrene	12.179	252	1028536	15.76	ppm	96
104)	Indeno(1,2,3-cd)pyrene	13.607	276	1160316	16.06	ppm	94
105)	Dibenzo(a,h)anthracene	13.626	278	999942	16.61	ppm	97
106)	Benzo(g,h,i)perylene	14.024	276	1009767	16.26	ppm	94

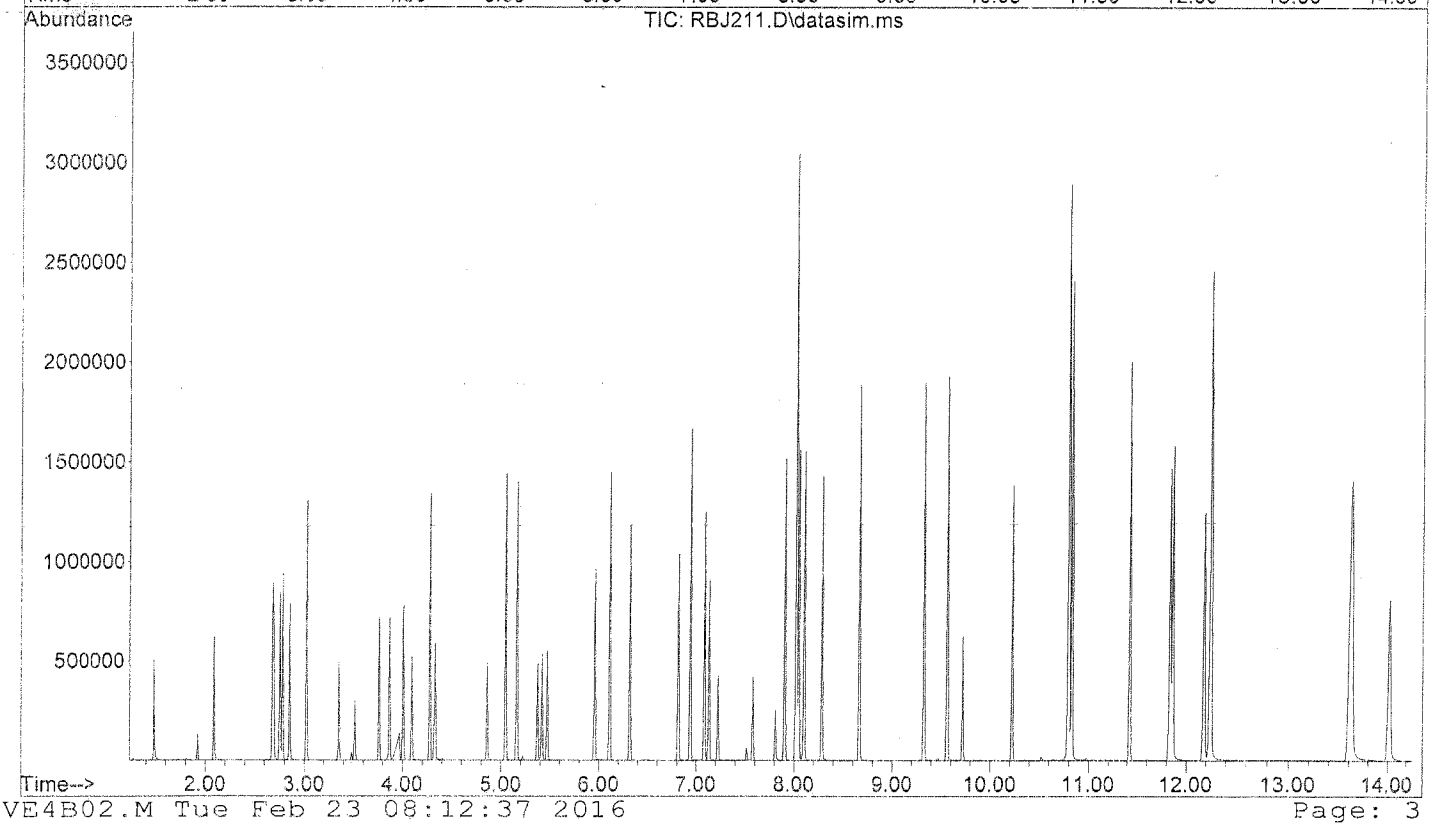
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ211.D
Acq On : 22 Feb 2016 10:59
Sample : SVB018WL
Misc :
Integrator: RTE
Quant Time: Feb 23 08:12:09 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00





Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ212.D
Acq On : 22 Feb 2016 11:18
Sample : SVB018WC
Misc :
Integrator: RTE
Quant Time: Feb 23 08:13:18 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.020	152	481183	40.00	ppm	0.00
21) Naphthalene-d8	4.253	136	1807777	40.00	ppm	0.00
41) Acenaphthene-d10	6.279	164	1047868	40.00	ppm	0.00
71) Phenanthrene-d10	8.018	188	1820098	40.00	ppm	0.00
87) Chrysene-d12	10.806	240	2055164	40.00	ppm	0.01
97) Perylene-d12	12.242	264	1858009	40.00	ppm	0.02
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	283318	17.93	ppm	0.01
Spiked Amount 30.000			Recovery = 59.77%			
6) Phenol-d5	2.675	99	426297	21.84	ppm	0.02
Spiked Amount 30.000			Recovery = 72.80%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.514	82	141528	6.94	ppm	0.00
Spiked Amount 10.000			Recovery = 69.40%			
46) 2-Fluorobiphenyl	5.471	172	291926	6.97	ppm	0.00
Spiked Amount 10.000			Recovery = 69.70%			
75) 2,4,6-Tribromophenol	7.224	330	120411	27.53	ppm	0.01
Spiked Amount 30.000			Recovery = 91.77%			
90) Terphenyl-d14	9.720	244	348209	7.91	ppm	0.00
Spiked Amount 10.000			Recovery = 79.10%			
Target Compounds						Qvalue
3) N-nitrosodimethylamine	1.481	74	152140	14.88	ppm	85
4) Pyridine	1.510	79	451326	24.53	ppm	94
7) Phenol	2.685	94	296939	14.68	ppm	95
8) Aniline	2.748	93	364601	14.16	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	229365	14.96	ppm	99
10) 2-Chlorophenol	2.847	128	266667	15.62	ppm	80
11) 1,3-Dichlorobenzene	2.977	146	295447	14.84	ppm	99
13) 1,4-Dichlorobenzene	3.034	146	307110	15.20	ppm	99
14) Benzyl alcohol	3.116	108	183925	16.76	ppm	91
15) 1,2-Dichlorobenzene	3.173	146	289502	15.00	ppm	99
16) 2-Methylphenol	3.197	107	215864	15.63	ppm	91
17) bis(2-chloroisopropyl)...	3.231	45	448075	14.03	ppm	99
18) 4-Methylphenol	3.336	107	317317	17.34	ppm	99
19) N-Nitroso-di-n-propyla...	3.351	70	189800	14.82	ppm	96
20) Hexachloroethane	3.480	117	114248	14.80	ppm	96
23) Nitrobenzene	3.533	77	292005	14.26	ppm	94
24) Isophorone	3.763	82	586923	14.96	ppm	97
25) 2-Nitrophenol	3.845	139	137086	16.59	ppm	72
26) 2,4-Dimethylphenol	3.869	107	271378	14.30	ppm	98
27) Benzoic acid	3.969	105	347651	29.64	ppm	97
28) bis(2-Chloroethoxy)met...	3.969	93	309250	15.07	ppm	97
29) 3,5-Dimethylphenol	4.008	107	335849	16.40	ppm	97
30) 2,4-Dichlorophenol	4.094	162	221085	13.74	ppm	99
31) 3,4-Dimethylphenol	4.186	107	349063	15.62	ppm	95
32) 1,2,4-Trichlorobenzene	4.186	180	264233	14.38	ppm	100
33) Naphthalene	4.278	128	792123	15.73	ppm	100
34) 4-Chloroaniline	4.321	127	315642	14.71	ppm	100
35) 2,6-Dichlorophenol	4.335	162	227720	14.96	ppm	99
36) Hexachlorobutadiene	4.398	225	161893	13.20	ppm	100
38) 4-Chloro-3-methylphenol	4.856	107	233021	15.27	ppm	96

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ212.D
Acq On : 22 Feb 2016 11:18
Sample : SVB018WC
Misc :
Integrator: RTE
Quant Time: Feb 23 08:13:18 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

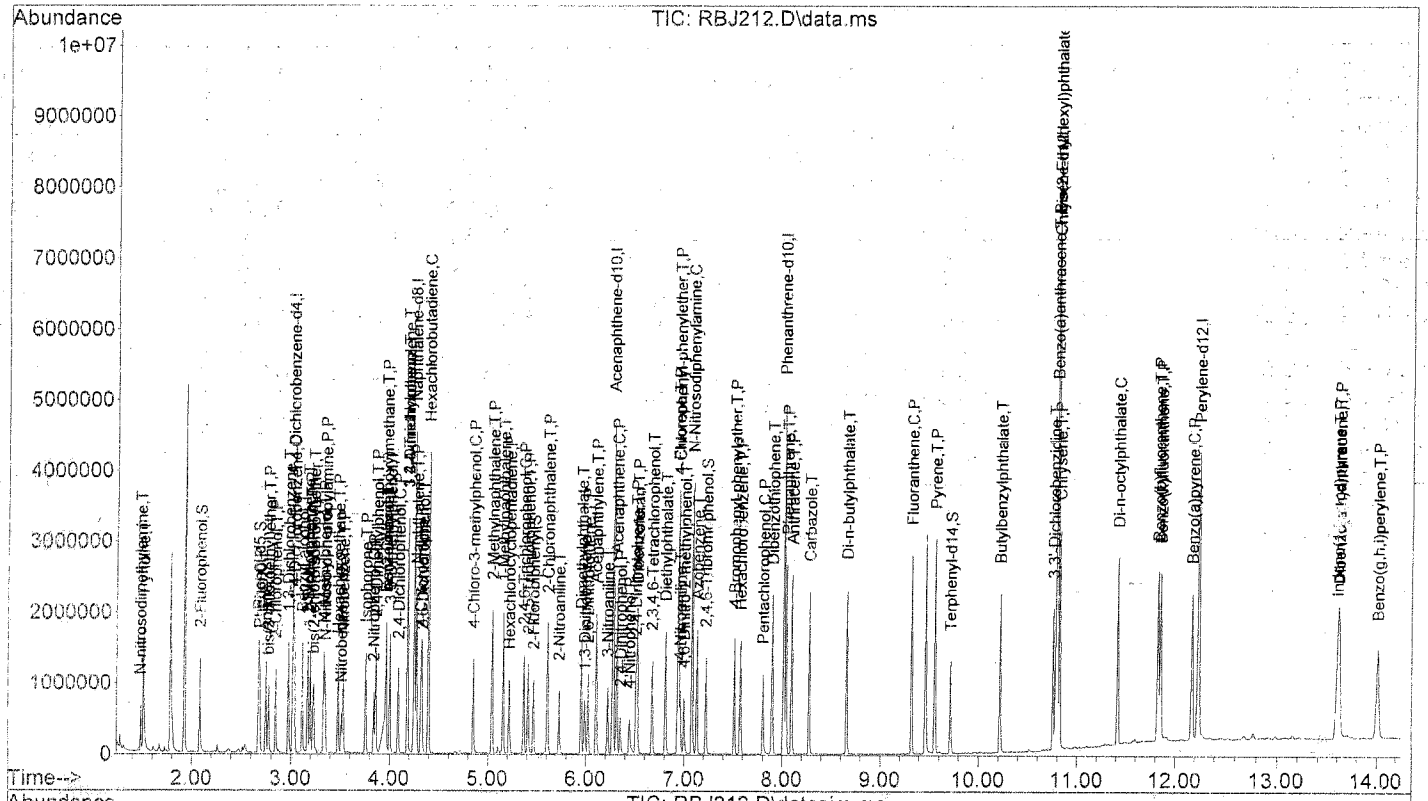
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
39)	2-Methylnaphthalene	5.048	142	522025	14.73	ppm	99
40)	1-Methylnaphthalene	5.158	142	486972	15.69	ppm	100
42)	Hexachlorocyclopentadiene	5.220	237	152094	11.56	ppm	99
44)	2,4,6-Trichlorophenol	5.369	196	175741	14.75	ppm	100
45)	2,4,5-Trichlorophenol	5.413	196	184019	14.68	ppm	98
49)	2-Chloronaphthalene	5.615	162	606994	17.29	ppm	99
50)	2-Nitroaniline	5.730	65	158525	16.01	ppm	95
53)	Dimethylphthalate	5.956	163	618313	16.03	ppm	99
54)	1,3-Dinitrobenzene	5.990	168	84368	16.39	ppm	76
55)	2,6-Dinitrotoluene	6.024	165	135930	17.23	ppm	95
57)	Acenaphthylene	6.106	152	930600	16.74	ppm	99
58)	3-Nitroaniline	6.226	138	138884	16.83	ppm	93
59)	Acenaphthene	6.317	153	552305	15.88	ppm	99
60)	2,4-Dinitrophenol	6.355	184	58214	17.63	ppm	100
61)	4-Nitrophenol	6.447	109	83855	15.52	ppm	86
62)	2,4-Dinitrotoluene	6.514	165	182258	17.76	ppm	95
63)	Dibenzofuran	6.528	168	764387	15.47	ppm	100
65)	2,3,4,6-Tetrachlorophenol	6.677	232	170763	15.17	ppm	99
67)	Diethylphthalate	6.814	149	650681	16.64	ppm	100
68)	Fluorene	6.940	166	604314	15.71	ppm	100
69)	4-Chlorophenyl-phenyle...	6.945	204	301731	15.39	ppm	99
70)	4-Nitroaniline	6.964	138	159247	18.76	ppm	96
72)	4,6-Dinitro-2-methylph...	7.001	198	106861	19.43	ppm	97
73)	N-Nitrosodiphenylamine	7.086	169	513355	16.51	ppm	99
74)	Azobenzene	7.134	77	608311	16.67	ppm	99
76)	4-Bromophenyl-phenylether	7.513	248	180804	16.54	ppm	98
77)	Hexachlorobenzene	7.579	284	201373	18.11	ppm	98
78)	Pentachlorophenol	7.806	266	108747	17.10	ppm	98
79)	Dibenzothiophene	7.900	184	937012	16.69	ppm	94
80)	Phenanthrene	8.046	178	931462	16.31	ppm	100
82)	Anthracene	8.103	178	957163	16.64	ppm	100
83)	Carbazole	8.281	167	854302	17.48	ppm	100
84)	Di-n-butylphthalate	8.663	149	1116736	18.85	ppm	100
86)	Fluoranthene	9.320	202	1107833	17.22	ppm	95
89)	Pyrene	9.561	202	1256212	17.88	ppm	96
91)	Butylbenzylphthalate	10.222	149	502909	21.11	ppm	98
93)	3,3'-Dichlorobenzidine	10.762	252	397269	18.77	ppm	100
94)	Benzo(a)anthracene	10.791	228	1075782	16.94	ppm	87
95)	Chrysene	10.825	228	1027852	17.51	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.801	149	737530	20.05	ppm	100
98)	Di-n-octylphthalate	11.422	149	1274248	20.19	ppm	99
99)	Benzo(b)fluoranthene	11.830	252	981930	16.48	ppm	93
100)	Benzo(k)fluoranthene	11.854	252	1023823	17.05	ppm	98
102)	Benzo(a)pyrene	12.174	252	941404	16.64	ppm	95
104)	Indeno(1,2,3-cd)pyrene	13.607	276	1059745	16.92	ppm	92
105)	Dibenzo(a,h)anthracene	13.621	278	927832	17.78	ppm	99
106)	Benzo(g,h,i)perylene	14.019	276	940442	17.46	ppm	95

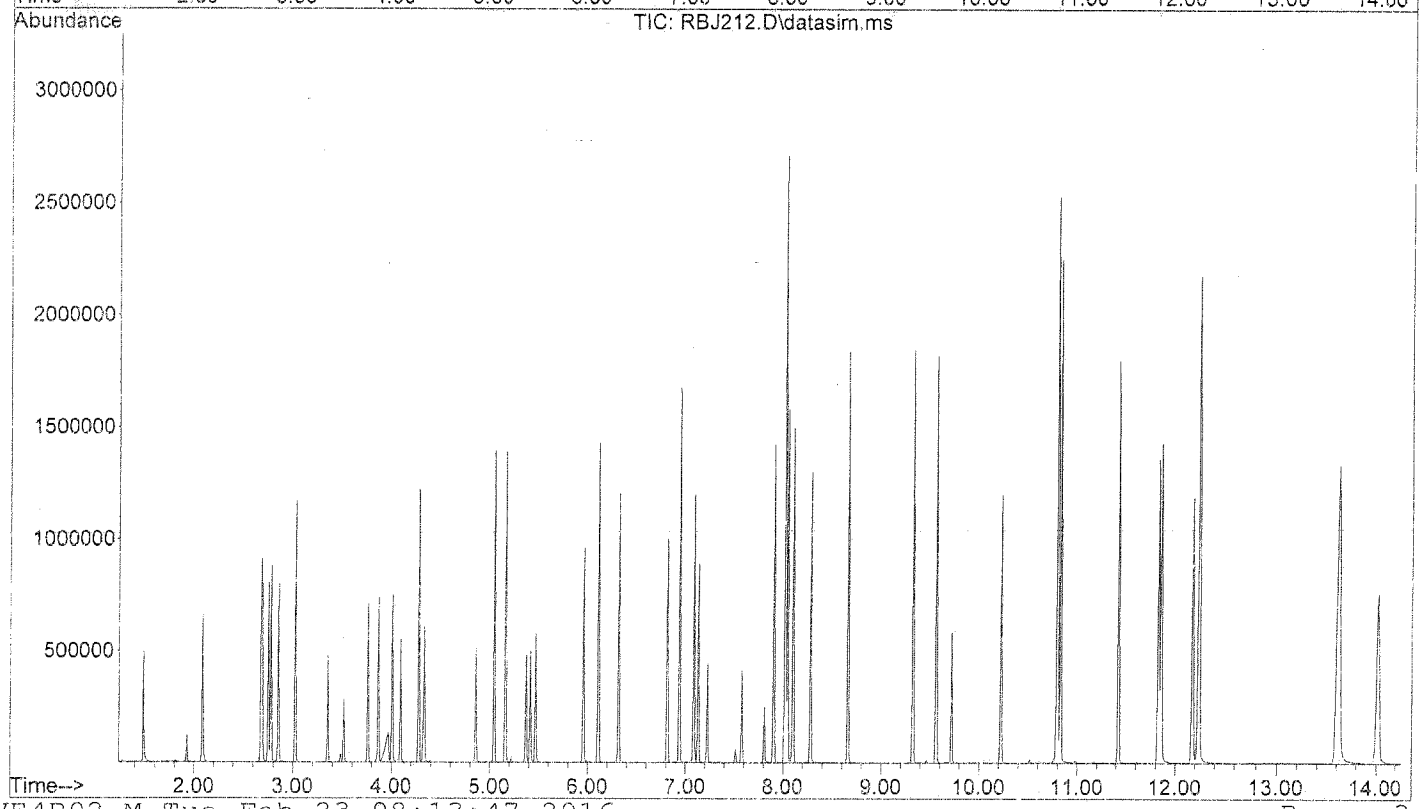
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ212.D
Acq On : 22 Feb 2016 11:18
Sample : SVB018WC
Misc :
Integrator: RTE
Quant Time: Feb 23 08:13:18 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00





INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ002
Instrument ID: TOE4

Project: CANNON AFB PBR
SDG No.: 16B094
DFTPP Injection Date: 02/02/16
DFTPP Injection Time: 08:58

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	47.04
68	Less than 2% of mass 69	0.76(1.8)1
69	% of mass 198	41.36
70	Less than 2% of mass 69	0.32(0.8)1
127	10.0 - 80.0% of mass 198	47.03
197	Less than 2.0% of mass 198	0.14
198	Base Peak, 100	100.00
199	5.0 - 9.0% of mass 198	6.68
275	10.0 - 60.0% of mass 198	22.97
365	Greater than 1.00% of mass 198	2.42
441	Present, but less than 24% of mass 442	8.85(15.5)2
442	Greater than 50% of mass 198	57.16
443	15.0 - 24.0% of mass 442	11.27(19.7)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD100	SVE4B021	RBJ003	02/02/16	09:09
2	SSTD080	SVE4B022	RBJ004	02/02/16	09:28
3	SSTD050	SVE4B023	RBJ005	02/02/16	09:47
4	SSTD040	SVE4B024	RBJ006	02/02/16	10:06
5	SSTD025	SVE4B025	RBJ007	02/02/16	10:25
6	SSTD020	SVE4B026	RBJ008	02/02/16	10:44
7	SSTD010	SVE4B027	RBJ009	02/02/16	11:04
8	SSTD004	SVE4B028	RBJ010	02/02/16	11:23
9	SSTD025	ISVE4B022	RBJ033	02/02/16	18:46

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:ICAL
SDG No.:ICAL
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	424119	3.02	1535126	4.25	929909	6.27
	UPPER LIMIT	848238	3.52	3070252	4.75	1859818	6.77
	LOWER LIMIT	212060	2.52	767563	3.75	464955	5.77
	SAMPLE ID						
1	SVE4B021	461215	3.02	1653283	4.24	975500	6.27
2	SVE4B022	457524	3.02	1635246	4.24	965543	6.27
3	SVE4B023	438355	3.02	1557201	4.25	920177	6.27
4	SVE4B024	455852	3.02	1618791	4.25	966999	6.27
5	SVE4B026	428154	3.02	1558094	4.25	937266	6.27
6	SVE4B027	432450	3.02	1552213	4.25	916662	6.27
7	SVE4B028	432154	3.02	1547249	4.24	918028	6.27
8	ISVE4B022	489141	3.02	1779787	4.25	1073834	6.27

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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-1 OLM02.0

pu 02-08-16

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:ICAL
SDG No.:ICAL
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1694673	8.01	1850796	10.79	1601653	12.22
	UPPER LIMIT	3389346	8.51	3701592	11.29	3203306	12.72
	LOWER LIMIT	847337	7.51	925398	10.29	800827	11.72
	SAMPLE ID						
1	SVE4B021	1717161	8.00	1841322	10.79	1572144	12.21
2	SVE4B022	1710410	8.00	1882885	10.79	1627440	12.21
3	SVE4B023	1669203	8.01	1936700	10.79	1696912	12.22
4	SVE4B024	1728695	8.01	1903162	10.79	1635198	12.22
5	SVE4B026	1665411	8.01	1881471	10.79	1593531	12.21
6	SVE4B027	1649622	8.01	1883963	10.79	1610421	12.21
7	SVE4B028	1630524	8.01	1830134	10.79	1579900	12.21
8	ISVE4B022	1895693	8.01	2074726	10.79	1806442	12.21

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

02-08-16

527

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E4 | Column Spec :ZB-SEMI ID :0.18MM
Beginning DateTime :02/02/16 09:09 | Ending DateTime :02/02/16 11:23
IC File :RBJ007 | HPChem Method :SVE4B02

WATER Init. Vol. (ml) : 1000 | Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 | Final Vol. (ml) : 1

IDX	Parameters	ON COL MG/L	WATER UG/L	SOIL MG/KG	R FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	4	4	.1333	RBJ010
3	N-nitrosodimethylamine	4	4	.1333	RBJ010
4	Pyridine	4	4	.1333	RBJ010
5	2-Fluorophenol	4	4	.1333	RBJ010
6	Phenol-d5	4	4	.1333	RBJ010
7	Phenol	4	4	.1333	RBJ010
8	Aniline	4	4	.1333	RBJ010
9	bis(2-chloroethyl)ether	4	4	.1333	RBJ010
10	2-Chlorophenol	4	4	.1333	RBJ010
11	1,3-Dichlorobenzene	4	4	.1333	RBJ010
12	1,2-Dichlorobenzene-d4	NA	NA	NA	NA
13	1,4-Dichlorobenzene	4	4	.1333	RBJ010
14	Benzyl alcohol	4	4	.1333	RBJ010
15	1,2-Dichlorobenzene	4	4	.1333	RBJ010
16	2-Methylphenol	4	4	.1333	RBJ010
17	bis(2-chloroisopropyl)ether	4	4	.1333	RBJ010
18	4-Methylphenol	4	4	.1333	RBJ010
19	N-Nitroso-di-n-propylamine	4	4	.1333	RBJ010
20	Hexachloroethane	4	4	.1333	RBJ010
21	Naphthalene-d8	IntSTD	IntSTD	IntSTD	IntSTD
22	Nitrobenzene-d5	4	4	.1333	RBJ010
23	Nitrobenzene	4	4	.1333	RBJ010
24	Isophorone	4	4	.1333	RBJ010
25	2-Nitrophenol	4	4	.1333	RBJ010
26	2,4-Dimethylphenol	4	4	.1333	RBJ010
27	Benzoic acid	4	4	.1333	RBJ010
28	bis(2-Chloroethoxy)methane	4	4	.1333	RBJ010
29	3,5-Dimethylphenol	4	4	.1333	RBJ010
30	2,4-Dichlorophenol	4	4	.1333	RBJ010
31	3,4-Dimethylphenol	4	4	.1333	RBJ010
32	1,2,4-Trichlorobenzene	4	4	.1333	RBJ010
33	Naphthalene	4	4	.1333	RBJ010
34	4-Chloroaniline	4	4	.1333	RBJ010
35	2,6-Dichlorophenol	4	4	.1333	RBJ010
36	Hexachlorobutadiene	4	4	.1333	RBJ010
37	Hydroquinone	NA	NA	NA	NA
38	4-Chloro-3-methylphenol	4	4	.1333	RBJ010
39	2-Methylnaphthalene	4	4	.1333	RBJ010
40	1-Methylnaphthalene	4	4	.1333	RBJ010
41	Acenaphthene-d10	IntSTD	IntSTD	IntSTD	IntSTD
42	Hexachlorocyclopentadiene	4	4	.1333	RBJ010
43	2,3,5-Trichlorophenol	4	4	.1333	RBJ010
44	2,4,6-Trichlorophenol	4	4	.1333	RBJ010
45	2,4,5-Trichlorophenol	4	4	.1333	RBJ010
46	2-Fluorobiphenyl	4	4	.1333	RBJ010
47	2,3,4-Trichlorophenol	4	4	.1333	RBJ010
48	Biphenyl	4	4	.1333	RBJ010
49	2-Chloronaphthalene	4	4	.1333	RBJ010
50	2-Nitroaniline	4	4	.1333	RBJ010
51	2,6-Dimethylnaphthalene	4	4	.1333	RBJ010
52	1,4-Dinitrobenzene	4	4	.1333	RBJ010
53	Dimethylphthalate	4	4	.1333	RBJ010
54	1,3-Dinitrobenzene	4	4	.1333	RBJ010
55	2,6-Dinitrotoluene	4	4	.1333	RBJ010
56	1,2-Dinitrobenzene	4	4	.1333	RBJ010
57	Acenaphthylene	4	4	.1333	RBJ010
58	3-Nitroaniline	4	4	.1333	RBJ010
59	Acenaphthene	4	4	.1333	RBJ010
60	2,4-Dinitrophenol	4	4	.1333	RBJ010
61	4-Nitrophenol	4	4	.1333	RBJ010
62	2,4-Dinitrotoluene	4	4	.1333	RBJ010
63	Dibenzofuran	4	4	.1333	RBJ010
64	2,3,5,6-Tetrachlorophenol	4	4	.1333	RBJ010
65	2,3,4,6-Tetrachlorophenol	4	4	.1333	RBJ010
66	2,3,5-Trimethylnaphthalene	4	4	.1333	RBJ010
67	Diethylphthalate	4	4	.1333	RBJ010
68	Fluorene	4	4	.1333	RBJ010
69	4-Chlorophenyl-phenylether	4	4	.1333	RBJ010
70	4-Nitroaniline	4	4	.1333	RBJ010
71	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
72	4,6-Dinitro-2-methylphenol	4	4	.1333	RBJ010
73	N-Nitrosodiphenylamine	4	4	.1333	RBJ010
74	Azobenzene	4	4	.1333	RBJ010
75	2,4,6-Tribromophenol	4	4	.1333	RBJ010
76	4-Bromophenyl-phenylether	4	4	.1333	RBJ010
77	Hexachlorobenzene	4	4	.1333	RBJ010
78	Pentachlorophenol	4	4	.1333	RBJ010
79	Dibenzothiophene	4	4	.1333	RBJ010
80	Phenanthrene	4	4	.1333	RBJ010
81	Dinoseb	NA	NA	NA	NA
82	Anthracene	4	4	.1333	RBJ010
83	Carbazole	4	4	.1333	RBJ010
84	Di-n-butylphthalate	4	4	.1333	RBJ010
85	1-Methylphenanthrene	4	4	.1333	RBJ010
86	Fluoranthene	4	4	.1333	RBJ010
87	Chrysene-d12	IntSTD	IntSTD	IntSTD	IntSTD
88	Benzidine	NA	NA	NA	NA
89	Pyrene	4	4	.1333	RBJ010
90	Terphenyl-d14	4	4	.1333	RBJ010
91	Butylbenzylphthalate	4	4	.1333	RBJ010
92	bis(2-ethylhexyl)adipate	4	4	.1333	RBJ010
93	3,3'-Dichlorobenzidine	4	4	.1333	RBJ010
94	Benzo(a)anthracene	4	4	.1333	RBJ010
95	Chrysene	4	4	.1333	RBJ010
96	bis(2-Ethylhexyl)phthalate	4	4	.1333	RBJ010
97	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
98	Di-n-octylphthalate	4	4	.1333	RBJ010
99	Benzo(b)fluoranthene	4	4	.1333	RBJ010
100	Benzo(k)fluoranthene	4	4	.1333	RBJ010
101	Benzo(e)pyrene	4	4	.1333	RBJ010
102	Benzo(a)pyrene	4	4	.1333	RBJ010
103	Perylene	4	4	.1333	RBJ010
104	Indeno(1,2,3-cd)pyrene	4	4	.1333	RBJ010
105	Dibenzo(a,h)anthracene	4	4	.1333	RBJ010
106	Benzo(g,h,i)perylene	4	4	.1333	RBJ010

pu 02-08-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E4 | Column Spec :ZB-SEMI ID :0.18MM
Beginning DateTime :02/02/16 09:09 | Ending DateTime :02/02/16 11:23
IC File :RBJ007 | HPChem Method :SVE4B02

WATER Init. Vol. (ml) : 1000 | Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 | Final Vol. (ml) : 2

IDX	Parameters	ON COL MG/L	WATER UG/L	SOIL MG/KG	R FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	4	8	.2667	RBJ010
3	N-nitrosodimethylamine	4	8	.2667	RBJ010
4	Pyridine	4	8	.2667	RBJ010
5	2-Fluorophenol	4	8	.2667	RBJ010
6	Phenol-d5	4	8	.2667	RBJ010
7	Phenol	4	8	.2667	RBJ010
8	Aniline	4	8	.2667	RBJ010
9	bis(2-chloroethyl)ether	4	8	.2667	RBJ010
10	2-Chlorophenol	4	8	.2667	RBJ010
11	1,3-Dichlorobenzene	4	8	.2667	RBJ010
12	1,2-Dichlorobenzene-d4	NA	NA	NA	NA
13	1,4-Dichlorobenzene	4	8	.2667	RBJ010
14	Benzyl alcohol	4	8	.2667	RBJ010
15	1,2-Dichlorobenzene	4	8	.2667	RBJ010
16	2-Methylphenol	4	8	.2667	RBJ010
17	bis(2-chloroisopropyl)ether	4	8	.2667	RBJ010
18	4-Methylphenol	4	8	.2667	RBJ010
19	N-Nitroso-di-n-propylamine	4	8	.2667	RBJ010
20	Hexachloroethane	4	8	.2667	RBJ010
21	Naphthalene-d8	IntSTD	IntSTD	IntSTD	IntSTD
22	Nitrobenzene-d5	4	8	.2667	RBJ010
23	Nitrobenzene	4	8	.2667	RBJ010
24	Isophorone	4	8	.2667	RBJ010
25	2-Nitrophenol	4	8	.2667	RBJ010
26	2,4-Dimethylphenol	4	8	.2667	RBJ010
27	Benzoic acid	4	8	.2667	RBJ010
28	bis(2-Chloroethoxy)methane	4	8	.2667	RBJ010
29	3,5-Dimethylphenol	4	8	.2667	RBJ010
30	2,4-Dichlorophenol	4	8	.2667	RBJ010
31	3,4-Dimethylphenol	4	8	.2667	RBJ010
32	1,2,4-Trichlorobenzene	4	8	.2667	RBJ010
33	Naphthalene	4	8	.2667	RBJ010
34	4-Chloroaniline	4	8	.2667	RBJ010
35	2,6-Dichlorophenol	4	8	.2667	RBJ010
36	Hexachlorobutadiene	4	8	.2667	RBJ010
37	Hydroquinone	NA	NA	NA	NA
38	4-Chloro-3-methylphenol	4	8	.2667	RBJ010
39	2-Methylnaphthalene	4	8	.2667	RBJ010
40	1-Methylnaphthalene	4	8	.2667	RBJ010
41	Acenaphthene-d10	IntSTD	IntSTD	IntSTD	IntSTD
42	Hexachlorocyclopentadiene	4	8	.2667	RBJ010
43	2,3,5-Trichlorophenol	4	8	.2667	RBJ010
44	2,4,6-Trichlorophenol	4	8	.2667	RBJ010
45	2,4,5-Trichlorophenol	4	8	.2667	RBJ010
46	2-Fluorobiphenyl	4	8	.2667	RBJ010
47	2,3,4-Trichlorophenol	4	8	.2667	RBJ010
48	Biphenyl	4	8	.2667	RBJ010
49	2-Chloronaphthalene	4	8	.2667	RBJ010
50	2-Nitroaniline	4	8	.2667	RBJ010
51	2,6-Dimethylnaphthalene	4	8	.2667	RBJ010
52	1,4-Dinitrobenzene	4	8	.2667	RBJ010
53	Dimethylphthalate	4	8	.2667	RBJ010
54	1,3-Dinitrobenzene	4	8	.2667	RBJ010
55	2,6-Dinitrotoluene	4	8	.2667	RBJ010
56	1,2-Dinitrobenzene	4	8	.2667	RBJ010
57	Acenaphthylene	4	8	.2667	RBJ010
58	3-Nitroaniline	4	8	.2667	RBJ010
59	Acenaphthene	4	8	.2667	RBJ010
60	2,4-Dinitrophenol	4	8	.2667	RBJ010
61	4-Nitrophenol	4	8	.2667	RBJ010
62	2,4-Dinitrotoluene	4	8	.2667	RBJ010
63	Dibenzofuran	4	8	.2667	RBJ010
64	2,3,5,6-Tetrachlorophenol	4	8	.2667	RBJ010
65	2,3,4,6-Tetrachlorophenol	4	8	.2667	RBJ010
66	2,3,5-Trimethylnaphthalene	4	8	.2667	RBJ010
67	Diethylphthalate	4	8	.2667	RBJ010
68	Fluorene	4	8	.2667	RBJ010
69	4-Chlorophenyl-phenylether	4	8	.2667	RBJ010
70	4-Nitroaniline	4	8	.2667	RBJ010
71	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
72	4,6-Dinitro-2-methylphenol	4	8	.2667	RBJ010
73	N-Nitrosodiphenylamine	4	8	.2667	RBJ010
74	Azobenzene	4	8	.2667	RBJ010
75	2,4,6-Tribromophenol	4	8	.2667	RBJ010
76	4-Bromophenyl-phenylether	4	8	.2667	RBJ010
77	Hexachlorobenzene	4	8	.2667	RBJ010
78	Pentachlorophenol	4	8	.2667	RBJ010
79	Dibenzothiophene	4	8	.2667	RBJ010
80	Phenanthrene	4	8	.2667	RBJ010
81	Dinoseb	NA	NA	NA	NA
82	Anthracene	4	8	.2667	RBJ010
83	Carbazole	4	8	.2667	RBJ010
84	Di-n-butylphthalate	4	8	.2667	RBJ010
85	1-Methylphenanthrene	4	8	.2667	RBJ010
86	Fluoranthene	4	8	.2667	RBJ010
87	Chrysene-d12	IntSTD	IntSTD	IntSTD	IntSTD
88	Benzidine	NA	NA	NA	NA
89	Pyrene	4	8	.2667	RBJ010
90	Terphenyl-d14	4	8	.2667	RBJ010
91	Butylbenzylphthalate	4	8	.2667	RBJ010
92	bis(2-ethylhexyl)adipate	4	8	.2667	RBJ010
93	3,3'-Dichlorobenzidine	4	8	.2667	RBJ010
94	Benzo(a)anthracene	4	8	.2667	RBJ010
95	Chrysene	4	8	.2667	RBJ010
96	bis(2-Ethylhexyl)phthalate	4	8	.2667	RBJ010
97	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
98	Di-n-octylphthalate	4	8	.2667	RBJ010
99	Benzo(b)fluoranthene	4	8	.2667	RBJ010
100	Benzo(k)fluoranthene	4	8	.2667	RBJ010
101	Benzo(e)pyrene	4	8	.2667	RBJ010
102	Benzo(a)pyrene	4	8	.2667	RBJ010
103	Perylene	4	8	.2667	RBJ010
104	Indeno(1,2,3-cd)pyrene	4	8	.2667	RBJ010
105	Dibenzo(a,h)anthracene	4	8	.2667	RBJ010
106	Benzo(g,h,i)perylene	4	8	.2667	RBJ010

TM 02-08-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E4
Beginning DateTime :02/02/16 09:09
Spike Units :PPM
IC File :RBJ007

Column Spec :ZB-SEMI ID :0.18MM
Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02

IDX	Parameters	4 11:23 RBJ010	10 11:04 RBJ009	20 10:44 RBJ008	25 10:25 RBJ007	40 10:06 RBJ006	50 09:47 RBJ005	80 09:28 RBJ004	100 09:09 RBJ003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	0	3.0151
2	1,4-Dioxane	0.674	0.610	0.588	0.582	0.567	0.573	------	------	0.599	6.63	1.3665
3	N-nitrosodimethylamine	0.841	0.841	0.860	0.872	0.838	0.848	------	------	0.850	1.57	1.4766
4	Pyridine	1.586	1.584	1.608	1.627	1.588	1.574	1.340	1.328	1.529	7.97	1.5023
5	2-Fluorophenol	1.302	1.298	1.322	1.339	1.311	1.311	------	------	1.314	1.13	2.0717
6	Phenol-d5	1.606	1.589	1.631	1.678	1.615	1.617	------	------	1.623	1.86	2.6593
7	Phenol	1.694	1.658	1.714	1.717	1.655	1.651	------	------	1.682	1.81	2.6706
8	Aniline	2.170	2.144	2.173	2.187	2.095	2.069	------	------	2.140	2.23	2.7436
9	bis(2-chloroethyl)ether	1.285	1.266	1.283	1.319	1.259	1.237	------	------	1.275	2.19	2.7723
10	2-Chlorophenol	1.363	1.366	1.404	1.413	1.481	1.487	------	------	1.419	3.81	2.8383
11	1,3-Dichlorobenzene	1.661	1.654	1.661	1.685	1.647	1.618	------	------	1.654	1.34	2.9719
12	1,2-Dichlorobenzene-d4	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
13	1,4-Dichlorobenzene	1.696	1.667	1.707	1.704	1.664	1.642	------	------	1.680	1.55	3.0303
14	Benzyl alcohol	0.883	0.910	0.943	0.933	0.905	0.898	------	------	0.912	2.45	3.1095
15	1,2-Dichlorobenzene	1.627	1.620	1.616	1.641	1.567	1.554	------	------	1.604	2.20	3.1647
16	2-Methylphenol	1.171	1.138	1.164	1.166	1.130	1.118	------	------	1.148	1.93	3.1839
17	bis(2-chloroisopropyl)ether	2.773	2.650	2.695	2.690	2.588	2.531	------	------	2.655	3.22	3.2287
18	4-Methylphenol	1.459	1.474	1.533	1.547	1.626	1.487	------	------	1.521	4.06	3.3213
19	N-Nitroso-di-n-propylamine	0.989	1.017	1.056	1.066	1.152	1.106	------	------	1.064	5.54	3.3508
20	Hexachloroethane	0.631	0.626	0.654	0.660	0.641	0.638	------	------	0.642	2.07	3.4769
21	Naphthalene-d8	1	1	1	1	1	1	1	1	1	0	4.2468
22	Nitrobenzene-d5	0.443	0.446	0.449	0.462	0.457	0.451	------	------	0.451	1.58	3.5081
23	Nitrobenzene	0.454	0.448	0.457	0.462	0.454	0.445	------	------	0.453	1.42	3.5281
24	Isophorone	0.876	0.861	0.865	0.885	0.884	0.840	------	------	0.868	1.97	3.7583
25	2-Nitrophenol	0.158	0.178	0.188	0.196	0.194	0.184	------	------	0.183	7.64	3.8390
26	2,4-Dimethylphenol	0.418	0.419	0.422	0.430	0.421	0.410	------	------	0.420	1.54	3.8542
27	Benzoic acid	0.177	0.193	0.243	0.255	0.267	0.264	0.278	0.270	0.243	15.58	3.9464
28	bis(2-Chloroethoxy)methane	0.467	0.453	0.457	0.462	0.448	0.438	------	------	0.454	2.26	3.9652
29	3,5-Dimethylphenol	0.416	0.410	0.472	0.481	0.481	0.458	------	------	0.453	7.12	3.9931
30	2,4-Dichlorophenol	0.345	0.351	0.360	0.365	0.360	0.354	------	------	0.356	2.03	4.0773
31	3,4-Dimethylphenol	0.500	0.493	0.498	0.505	0.490	0.481	------	------	0.495	1.72	4.1722
32	1,2,4-Trichlorobenzene	0.418	0.413	0.408	0.408	0.400	0.391	------	------	0.406	2.33	4.1786
33	Naphthalene	1.155	1.115	1.111	1.128	1.097	1.081	------	------	1.115	2.29	4.2703
34	4-Chloroaniline	0.472	0.478	0.482	0.486	0.469	0.461	------	------	0.475	1.94	4.3154
35	2,6-Dichlorophenol	0.332	0.338	0.340	0.344	0.337	0.329	------	------	0.337	1.66	4.3242
36	Hexachlorobutadiene	0.270	0.268	0.268	0.276	0.275	0.272	------	------	0.271	1.22	4.3950
37	Hydroquinone	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
38	4-Chloro-3-methylphenol	0.323	0.322	0.344	0.347	0.349	0.341	------	------	0.338	3.57	4.8362
39	2-Methylnaphthalene	0.815	0.786	0.785	0.796	0.770	0.754	------	------	0.784	2.67	5.0390
40	1-Methylnaphthalene	0.713	0.685	0.693	0.695	0.676	0.657	------	------	0.687	2.73	5.1532
41	Acenaphthene-d10	1	1	1	1	1	1	1	1	1	0	6.2716
42	Hexachlorocyclopentadiene	0.465	0.487	0.508	0.511	0.525	0.518	------	------	0.502	4.45	5.2179
43	2,3,5-Trichlorophenol	0.358	0.434	0.410	0.446	0.461	0.457	------	------	0.428	9.04	5.2235
44	2,4,6-Trichlorophenol	0.424	0.441	0.463	0.463	0.470	0.468	------	------	0.455	4.02	5.3558
45	2,4,5-Trichlorophenol	0.446	0.471	0.474	0.493	0.496	0.490	------	------	0.478	3.93	5.3912
46	2-Fluorobiphenyl	1.648	1.617	1.609	1.595	1.563	1.556	------	------	1.598	2.17	5.4661
47	2,3,4-Trichlorophenol	0.409	0.425	0.423	0.423	0.420	0.417	------	------	0.419	1.40	5.4692
48	Biphenyl	1.697	1.650	1.630	1.637	1.593	1.566	------	------	1.629	2.80	5.5847
49	2-Chloronaphthalene	1.356	1.337	1.319	1.317	1.291	1.420	------	------	1.340	3.36	5.6063
50	2-Nitroaniline	0.335	0.367	0.388	0.395	0.395	0.387	------	------	0.378	6.20	5.7214
51	2,6-Dimethylnaphthalene	1.180	1.162	1.148	1.168	1.142	1.123	------	------	1.154	1.76	5.7709
52	1,4-Dinitrobenzene	0.137	0.153	0.169	0.177	0.181	0.178	------	------	0.166	10.58	5.8904
53	Dimethylphthalate	1.479	1.464	1.499	1.478	1.474	1.443	------	------	1.473	1.25	5.9547
54	1,3-Dinitrobenzene	0.163	0.190	0.205	0.209	0.208	0.205	------	------	0.197	9.11	5.9788
55	2,6-Dinitrotoluene	0.284	0.294	0.304	0.309	0.309	0.307	------	------	0.301	3.30	6.0190
56	1,2-Dinitrobenzene	0.113	0.124	0.130	0.134	0.131	0.130	------	------	0.127	6.06	6.0793
57	Acenaphthylene	2.073	2.087	2.085	2.274	2.032	2.179	------	------	2.122	4.18	6.1010
58	3-Nitroaniline	0.292	0.317	0.318	0.322	0.321	0.320	------	------	0.315	3.68	6.2157

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59	Acenaphthene	1.364	1.337	1.327	1.337	1.316	1.287	------	------	1.328	1.93	6.3123
60	2,4-Dinitrophenol	0.067	0.091	0.122	0.132	0.142	0.143	------	------	0.116	26.38	6.3387
61	4-Nitrophenol	0.167	0.198	0.213	0.215	0.216	0.227	------	------	0.206	10.34	6.4058
62	2,4-Dinitrotoluene	0.337	0.387	0.399	0.413	0.406	0.408	------	------	0.392	7.16	6.5025
63	Dibenzofuran	1.937	1.905	1.886	1.893	1.864	1.830	------	------	1.886	1.94	6.5193
64	2,3,5,6-Tetrachlorophenol	0.272	0.293	0.319	0.328	0.335	0.327	------	------	0.312	7.84	6.6087
65	2,3,4,6-Tetrachlorophenol	0.400	0.418	0.430	0.438	0.449	0.444	------	------	0.430	4.25	6.6606
66	2,3,5-Trimethylnaphthalene	1.088	1.078	1.093	1.088	1.075	1.056	------	------	1.080	1.25	6.7738
67	Diethylphthalate	1.480	1.480	1.501	1.519	1.488	1.485	------	------	1.492	1.03	6.8113
68	Fluorene	1.499	1.484	1.477	1.480	1.445	1.428	------	------	1.469	1.82	6.9332
69	4-Chlorophenyl-phenylether	0.761	0.751	0.754	0.751	0.740	0.733	------	------	0.748	1.34	6.9387
70	4-Nitroaniline	0.287	0.305	0.312	0.347	0.342	0.351	------	------	0.324	8.12	6.9512
71	Phenanthrene-d10	1	1	1	1	1	1	1	1	1	0	8.0076
72	4,6-Dinitro-2-methylphenol	0.067	0.100	0.120	0.125	0.129	0.131	------	------	0.112	21.93	6.9879
73	N-Nitrosodiphenylamine	0.690	0.675	0.698	0.686	0.682	0.670	------	------	0.683	1.47	7.0776
74	Azobenzene	0.813	0.798	0.819	0.800	0.796	0.785	------	------	0.802	1.51	7.1275
75	2,4,6-Tribromophenol	0.083	0.093	0.098	0.100	0.102	0.101	------	------	0.096	7.59	7.2113
76	4-Bromophenyl-phenylether	0.247	0.232	0.244	0.239	0.240	0.240	------	------	0.240	2.11	7.5077
77	Hexachlorobenzene	0.249	0.240	0.246	0.242	0.246	0.243	------	------	0.244	1.23	7.5659
78	Pentachlorophenol	0.109	0.130	0.145	0.148	0.154	0.152	------	------	0.140	12.24	7.7887
79	Dibenzothiophene	1.276	1.233	1.252	1.230	1.207	1.205	------	------	1.234	2.20	7.8910
80	Phenanthrene	1.292	1.249	1.271	1.254	1.239	1.225	------	------	1.255	1.91	8.0338
81	Dinoseb	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
82	Anthracene	1.253	1.264	1.276	1.279	1.256	1.255	------	------	1.264	0.90	8.0902
83	Carbazole	1.091	1.079	1.086	1.075	1.048	1.065	------	------	1.074	1.46	8.2665
84	Di-n-butylphthalate	1.212	1.304	1.332	1.345	1.311	1.309	------	------	1.302	3.60	8.6604
85	1-Methylphenanthrene	0.884	0.895	0.900	0.898	0.874	0.889	------	------	0.890	1.11	8.7023
86	Fluoranthene	1.397	1.408	1.439	1.418	1.399	1.424	------	------	1.414	1.15	9.3110
87	Chrysene-d12	1	1	1	1	1	1	1	1	1	0	10.7882
88	Benzidine	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
89	Pyrene	1.341	1.325	1.351	1.452	1.391	1.346	------	------	1.368	3.42	9.5470
90	Terphenyl-d14	0.859	0.845	0.866	0.867	0.863	0.838	------	------	0.856	1.41	9.7126
91	Butylbenzylphthalate	0.361	0.439	0.490	0.499	0.502	0.491	------	------	0.464	11.98	10.2192
92	bis(2-ethylhexyl)adipate	0.306	0.373	0.403	0.407	0.405	0.394	------	------	0.381	10.19	10.2976
93	3,3'-Dichlorobenzidine	0.366	0.400	0.419	0.427	0.429	0.432	------	------	0.412	6.19	10.7475
94	Benzo(a)anthracene	1.234	1.206	1.235	1.249	1.248	1.243	------	------	1.236	1.31	10.7766
95	Chrysene	1.171	1.136	1.145	1.146	1.130	1.126	------	------	1.142	1.42	10.8139
96	bis(2-Ethylhexyl)phthalate	0.628	0.701	0.743	0.748	0.746	0.730	------	------	0.716	6.46	10.7985
97	Perylene-d12	1	1	1	1	1	1	1	1	1	0	12.2145
98	Di-n-octylphthalate	1.051	1.308	1.442	1.446	1.469	1.437	------	------	1.359	11.88	11.4203
99	Benzo(b)fluoranthene	1.264	1.219	1.280	1.341	1.275	1.317	------	------	1.283	3.32	11.8092
100	Benzo(k)fluoranthene	1.263	1.301	1.333	1.267	1.338	1.254	------	------	1.293	2.85	11.8374
101	Benzo(e)pyrene	1.149	1.165	1.198	1.205	1.194	1.193	------	------	1.184	1.87	12.0937
102	Benzo(a)pyrene	1.173	1.183	1.231	1.234	1.248	1.238	------	------	1.218	2.59	12.1520
103	Perylene	1.194	1.235	1.246	1.232	1.214	1.212	------	------	1.222	1.55	12.2451
104	Indeno(1,2,3-cd)pyrene	1.230	1.304	1.372	1.385	1.400	1.400	------	------	1.349	5.04	13.5598
105	Dibenzo(a,h)anthracene	1.051	1.074	1.140	1.158	1.166	1.153	------	------	1.124	4.34	13.5841
106	Benzo(g,h,i)perylene	1.149	1.113	1.158	1.176	1.185	1.174	------	------	1.159	2.24	13.9660

Ave_%RSD : 4.2 Max_%RSD : 26.4

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
27	Benzoic acid	-0.01353	0.27777	0.9993
60	2,4-Dinitrophenol	-0.01006	0.14884	0.9982
72	4,6-Dinitro-2-methylphenol	-0.00746	0.13623	0.9998

PM
08-08-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E4
Beginning DateTime :02/02/16 09:09
Spike Units :PPM
IC File :RBJ007

Column Spec :ZB-SEMI ID :0.18MM
Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02

IDX	Parameters	4 11:23 RBJ010	10 11:04 RBJ009	20 10:44 RBJ008	25 10:25 RBJ007	40 10:06 RBJ006	50 09:47 RBJ005	80 09:28 RBJ004	100 09:09 RBJ003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	0	3.0151
2	1,4-Dioxane	113	102	98	97	95	96	------	------	4.8	6.63	1.3665
3	N-nitrosodimethylamine	99	99	101	103	99	100	------	------	1.3	1.57	1.4766
4	Pyridine	104	104	105	106	104	103	88	87	6.4	7.97	1.5023
5	2-Fluorophenol	99	99	101	102	100	100	------	------	.8	1.13	2.0717
6	Phenol-d5	99	98	100	103	100	100	------	------	1.3	1.86	2.6593
7	Phenol	101	99	102	102	98	98	------	------	1.6	1.81	2.6706
8	Aniline	101	100	102	102	98	97	------	------	1.8	2.23	2.7436
9	bis(2-chloroethyl)ether	101	99	101	103	99	97	------	------	1.6	2.19	2.7723
10	2-Chlorophenol	96	96	99	100	104	105	------	------	3.1	3.81	2.8383
11	1,3-Dichlorobenzene	100	100	100	102	100	98	------	------	.9	1.34	2.9719
12	1,2-Dichlorobenzene-d4	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
13	1,4-Dichlorobenzene	101	99	102	101	99	98	------	------	1.3	1.55	3.0303
14	Benzyl alcohol	97	100	103	102	99	98	------	------	1.9	2.45	3.1095
15	1,2-Dichlorobenzene	101	101	101	102	98	97	------	------	1.8	2.20	3.1647
16	2-Methylphenol	102	99	101	102	98	97	------	------	1.7	1.93	3.1839
17	bis(2-chloroisopropyl)ether	104	100	102	101	97	95	------	------	2.4	3.22	3.2287
18	4-Methylphenol	96	97	101	102	107	98	------	------	3.1	4.06	3.3213
19	N-Nitroso-di-n-propylamine	93	96	99	100	108	104	------	------	4.1	5.54	3.3508
20	Hexachloroethane	98	98	102	103	100	99	------	------	1.6	2.07	3.4769
21	Naphthalene-d8	1	1	1	1	1	1	1	1	1	0	4.2468
22	Nitrobenzene-d5	98	99	100	102	101	100	------	------	1.2	1.58	3.5081
23	Nitrobenzene	100	99	101	102	100	98	------	------	1	1.42	3.5281
24	Isophorone	101	99	100	102	102	97	------	------	1.5	1.97	3.7583
25	2-Nitrophenol	86	97	103	107	106	101	------	------	5.5	7.64	3.8390
26	2,4-Dimethylphenol	100	100	100	102	100	98	------	------	1	1.54	3.8542
27	Benzoic acid	113	89	97	99	101	99	114	111	12.1	15.58	3.9464
28	bis(2-Chloroethoxy)methane	103	100	101	102	99	96	------	------	1.7	2.26	3.9652
29	3,5-Dimethylphenol	92	91	104	106	106	101	------	------	5.9	7.12	3.9931
30	2,4-Dichlorophenol	97	99	101	103	101	99	------	------	1.6	2.03	4.0773
31	3,4-Dimethylphenol	101	100	101	102	99	97	------	------	1.3	1.72	4.1722
32	1,2,4-Trichlorobenzene	103	102	100	100	99	96	------	------	1.8	2.33	4.1786
33	Naphthalene	104	100	100	101	98	97	------	------	1.6	2.29	4.2703
34	4-Chloroaniline	99	101	101	102	99	97	------	------	1.5	1.94	4.3154
35	2,6-Dichlorophenol	99	100	101	102	100	98	------	------	1.2	1.66	4.3242
36	Hexachlorobutadiene	100	99	99	102	101	100	------	------	1	1.22	4.3950
37	Hydroquinone	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
38	4-Chloro-3-methylphenol	96	95	102	103	103	101	------	------	3	3.57	4.8362
39	2-Methylnaphthalene	104	100	100	102	98	96	------	------	1.9	2.67	5.0390
40	1-Methylnaphthalene	104	100	101	101	98	96	------	------	2	2.73	5.1532
41	Acenaphthene-d10	1	1	1	1	1	1	1	1	1	0	6.2716
42	Hexachlorocyclopentadiene	93	97	101	102	105	103	------	------	3.5	4.45	5.2179
43	2,3,5-Trichlorophenol	84	101	96	104	108	107	------	------	6.8	9.04	5.2235
44	2,4,6-Trichlorophenol	93	97	102	102	103	103	------	------	3.3	4.02	5.3558
45	2,4,5-Trichlorophenol	93	99	99	103	104	103	------	------	3.1	3.93	5.3912
46	2-Fluorobiphenyl	103	101	101	100	98	97	------	------	1.7	2.17	5.4661
47	2,3,4-Trichlorophenol	98	101	101	101	100	100	------	------	1.1	1.40	5.4692
48	Biphenyl	104	101	100	100	98	96	------	------	2	2.80	5.5847
49	2-Chloronaphthalene	101	100	98	98	96	106	------	------	2.4	3.36	5.6063
50	2-Nitroaniline	89	97	103	104	104	102	------	------	4.7	6.20	5.7214
51	2,6-Dimethylnaphthalene	102	101	99	101	99	97	------	------	1.4	1.76	5.7709
52	1,4-Dinitrobenzene	83	92	102	107	109	107	------	------	8.3	10.58	5.8904
53	Dimethylphthalate	100	99	102	100	100	98	------	------	.9	1.25	5.9547
54	1,3-Dinitrobenzene	83	96	104	106	106	104	------	------	6.8	9.11	5.9788
55	2,6-Dinitrotoluene	94	98	101	103	103	102	------	------	2.7	3.30	6.0190
56	1,2-Dinitrobenzene	89	98	102	106	103	102	------	------	4.5	6.06	6.0793
57	Acenaphthylene	98	98	98	107	96	103	------	------	3.3	4.18	6.1010
58	3-Nitroaniline	93	101	101	102	102	102	------	------	2.4	3.68	6.2157
59	Acenaphthene	103	101	100	101	99	97	------	------	1.4	1.93	6.3123
60	2,4-Dinitrophenol	113	89	96	100	102	102	------	------	21.4	26.38	6.3387
61	4-Nitrophenol	81	96	103	104	105	110	------	------	7.6	10.34	6.4058
62	2,4-Dinitrotoluene	86	99	102	105	104	104	------	------	5	7.16	6.5025
63	Dibenzofuran	103	101	100	100	99	97	------	------	1.4	1.94	6.5193
64	2,3,5,6-Tetrachlorophenol	87	94	102	105	107	105	------	------	6.4	7.84	6.6087
65	2,3,4,6-Tetrachlorophenol	93	97	100	102	104	103	------	------	3.2	4.25	6.6606
66	2,3,5-Trimethylnaphthalene	101	100	101	101	100	98	------	------	.9	1.25	6.7738
67	Diethylphthalate	99	99	101	102	100	100	------	------	.8	1.03	6.8113
68	Fluorene	102	101	101	101	98	97	------	------	1.5	1.82	6.9332
69	4-Chlorophenyl-phenylether	102	100	101	100	99	98	------	------	1.1	1.34	6.9387
70	4-Nitroaniline	89	94	96	107	106	108	------	------	7	8.12	6.9512
71	Phenanthrene-d10	1	1	1	1	1	1	1	1	1	0	8.0076
72	4,6-Dinitro-2-methylphenol	104	96	99	101	100	101	------	------	17	21.93	6.9879
73	N-Nitrosodiphenylamine	101	99	102	100	100	98	------	------	1.1	1.47	7.0776
74	Azobenzene	101	100	102	100	99	98	------	------	1.2	1.51	7.1275
75	2,4,6-Tribromophenol	86	97	102	104	106	105	------	------	5.7	7.59	7.2113
76	4-Bromophenyl-phenylether	103	97	102	100	100	100	------	------	1.4	2.11	7.5077
77	Hexachlorobenzene	102	98	101	99	101	100	------	------	1.1	1.23	7.5659
78	Pentachlorophenol	78	93	104	106	110	109	------	------	9.5	12.24	7.7887
79	Dibenzothiophene	103	100	101	100	98	98	------	------	1.6	2.20	7.8910
80	Phenanthrene	103	100	101	100	99	98	------	------	1.4	1.91	8.0338
81	Dinoseb	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
82	Anthracene	99	100	101	101	99	99	------	------	.7	0.90	8.0902
83	Carbazole	102	100	101	100	98	99	------	------	1.1	1.46	8.2665
84	Di-n-butylphthalate	93	100	102	103	101	101	------	------	2.3	3.60	8.6604
85	1-Methylphenanthrene	99	101	101	101	98	100	------	------	.9	1.11	8.7023
86	Fluoranthene	99	100	102	100	99	101	------	------	.9	1.15	9.3110
87	Chrysene-d12	1	1	1	1	1	1	1	1	1	0	10.7882
88	Benzidine	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
89	Pyrene	98	97	99	106	102	98	------	------	2.6	3.42	9.5470
90	Terphenyl-d14	100	99	101	101	101	98	------	------	1.2	1.41	9.7126
91	Butylbenzylphthalate	78	95	106	108	108	106	------	------	9.1	11.98	10.2192
92	bis(2-ethylhexyl)adipate	80	98	106	107	106	103	------	------	7.3	10.19	10.2976
93	3,3'-Dichlorobenzidine	89	97	102	104	104	105	------	------	4.7	6.19	10.7475
94	Benzo(a)anthracene	100	98	100	101	101	101	------	------	.9	1.31	10.7766
95	Chrysene	103	99	100	100	99	99	------	------	1	1.42	10.8139
96	bis(2-Ethylhexyl)phthalate	88	98	104	104	104	102	------	------	4.8	6.46	10.7985
97	Perylene-d12	1	1	1	1	1	1	1	1	1	0	12.2145
98	Di-n-octylphthalate	77	96	106	106	108	106	------	------	8.8	11.88	11.4203
99	Benzo(b)fluoranthene	99	95	100	105	99	103	------	------	2.4	3.32	11.8092
100	Benzo(k)fluoranthene	98	101	103	98	103	97	------	------	2.4	2.85	11.8374
101	Benzo(e)pyrene	97	98	101	102	101	101	------	------	1.5	1.87	12.0937
102	Benzo(a)pyrene	96	97	101	101	102	102	------	------	2.2	2.59	12.1520
103	Perylene	98	101	102	101	99	99	------	------	1.3	1.55	12.2451
104	Indeno(1,2,3-cd)pyrene	91	97	102	103	104	104	------	------	4	5.04	13.5598
105	Dibenzo(a,h)anthracene	94	96	101	103	104	103	------	------	3.6	4.34	13.5841
106	Benzo(g,h,i)perylene	99	96	100	101	102	101	------	------	1.7	2.24	13.9660

02-08-16

Compound List Report E4

Method Path : C:\msdchem\1\METHODS\
Method File : SVE4B02.M
Title : SEMIVOLATILES
Last Update : Tue Feb 02 13:41:58 2016
Response Via : Initial Calibration

Total Cpnds : 106

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dichlorobenzene-d4	152	3.015	1.000	A	1	A	B
2	T	1,4-Dioxane	88	1.366	0.453	A	1	A	B
3	T	N-nitrosodimethylamine	74	1.476	0.490	A	1	A	B
4	T	Pyridine	79	1.505	0.499	A	1	A	B
5	S	2-Fluorophenol	112	2.070	0.687	A	1	A	B
6	S	Phenol-d5	99	2.659	0.882	A	1	A	B
7	C,P	Phenol	94	2.670	0.886	A	1	A	B
8	T	Aniline	93	2.743	0.910	A	1	A	B
9	T	bis(2-chloroethyl)ether	93	2.774	0.920	A	1	A	B
10	T	2-Chlorophenol	128	2.836	0.941	A	1	A	B
11	T	1,3-Dichlorobenzene	146	2.972	0.986	A	1	A	B
12	S	1,2-Dichlorobenzene-d4	152	0.000	0.000	A	1	A	B
13	C	1,4-Dichlorobenzene	146	3.029	1.005	A	1	A	B
14	T	Benzyl alcohol	108	3.111	1.032	A	1	A	B
15	T	1,2-Dichlorobenzene	146	3.164	1.049	A	1	A	B
16	T	2-Methylphenol	107	3.183	1.056	A	1	A	B
17	T	bis(2-chloroisopropyl)ether	45	3.231	1.072	A	1	A	B
18	T	4-Methylphenol	107	3.322	1.102	A	1	A	B
19	P,P	N-Nitroso-di-n-propylamine	70	3.351	1.111	A	1	A	B
20	T	Hexachloroethane	117	3.475	1.153	A	1	A	B
21	I	Naphthalene-d8	136	4.248	1.000	A	1	A	B
22	S	Nitrobenzene-d5	82	3.509	0.826	A	1	A	B
23	T	Nitrobenzene	77	3.528	0.831	A	1	A	B
24	T	Isophorone	82	3.758	0.885	A	1	A	B
25	C,P	2-Nitrophenol	139	3.840	0.904	A	1	A	B
26	T	2,4-Dimethylphenol	107	3.854	0.907	A	1	A	B
27	T	Benzoic acid	105	3.936	0.927	L	1	A	B
28	T	bis(2-Chloroethoxy)methane	93	3.964	0.933	A	1	A	B
29	T	3,5-Dimethylphenol	107	3.993	0.940	A	1	A	B
30	C,P	2,4-Dichlorophenol	162	4.080	0.960	A	1	A	B
31	T	3,4-Dimethylphenol	107	4.171	0.982	A	1	A	B
32	T	1,2,4-Trichlorobenzene	180	4.181	0.984	A	1	A	B
33	T	Naphthalene	128	4.273	1.006	A	1	A	B
34	T	4-Chloroaniline	127	4.316	1.016	A	1	A	B
35	T	2,6-Dichlorophenol	162	4.326	1.018	A	1	A	B
36	C	Hexachlorobutadiene	225	4.393	1.034	A	1	A	B
37	T	Hydroquinone	110	0.000	0.000	A	1	A	B
38	C,P	4-Chloro-3-methylphenol	107	4.837	1.139	A	1	A	B
39	T	2-Methylnaphthalene	142	5.038	1.186	A	1	A	B
40	T	1-Methylnaphthalene	142	5.153	1.213	A	1	A	B
41	I	Acenaphthene-d10	164	6.274	1.000	A	1	A	B
42	P	Hexachlorocyclopentadiene	237	5.220	0.832	A	1	A	B
43	T	2,3,5-Trichlorophenol	196	5.225	0.833	A	1	A	B
44	C,P	2,4,6-Trichlorophenol	196	5.355	0.854	A	1	A	B
45	T	2,4,5-Trichlorophenol	196	5.393	0.860	A	1	A	B
46	S	2-Fluorobiphenyl	172	5.466	0.871	A	1	A	B
47	T	2,3,4-Trichlorophenol	196	5.471	0.872	A	1	A	B
48	T	Biphenyl	154	5.586	0.890	A	1	A	B
49	T	2-Chloronaphthalene	162	5.605	0.893	A	1	A	B
50	T	2-Nitroaniline	65	5.720	0.912	A	1	A	B
51	T	2,6-Dimethylnaphthalene	156	5.773	0.920	A	1	A	B
52	T	1,4-Dinitrobenzene	168	5.889	0.939	A	1	A	B
53	T	Dimethylphthalate	163	5.956	0.949	A	1	A	B
54	T	1,3-Dinitrobenzene	168	5.980	0.953	A	1	A	B

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55	T	2,6-Dinitrotoluene	165	6.019	0.959	A	1	A	B
56	T	1,2-Dinitrobenzene	168	6.082	0.969	A	1	A	B
57	T	Acenaphthylene	152	6.101	0.972	A	1	A	B
58	T	3-Nitroaniline	138	6.216	0.991	A	1	A	B
59	C,P	Acenaphthene	153	6.312	1.006	A	1	A	B
60	P	2,4-Dinitrophenol	184	6.341	1.011	L	1	A	B
61	P	4-Nitrophenol	109	6.408	1.021	A	1	A	B
62	T	2,4-Dinitrotoluene	165	6.504	1.037	A	1	A	B
63	T	Dibenzofuran	168	6.518	1.039	A	1	A	B
64	T	2,3,5,6-Tetrachlorophenol	230	6.609	1.053	A	1	A	B
65	T	2,3,4,6-Tetrachlorophenol	232	6.662	1.062	A	1	A	B
66	T	2,3,5-Trimethylnaphthalene	170	6.776	1.080	A	1	A	B
67	T	Diethylphthalate	149	6.813	1.086	A	1	A	B
68	T	Fluorene	166	6.935	1.105	A	1	A	B
69	T	4-Chlorophenyl-phenylether	204	6.940	1.106	A	1	A	B
70	T	4-Nitroaniline	138	6.954	1.108	A	1	A	B
71	I	Phenanthrene-d10	188	8.009	1.000	A	1	A	B
72	T	4,6-Dinitro-2-methylphenol	198	6.987	0.872	L	1	A	B
73	C	N-Nitrosodiphenylamine	169	7.077	0.884	A	1	A	B
74	T	Azobenzene	77	7.129	0.890	A	1	A	B
75	S	2,4,6-Tribromophenol	330	7.210	0.900	A	1	A	B
76	T	4-Bromophenyl-phenylether	248	7.508	0.937	A	1	A	B
77	T	Hexachlorobenzene	284	7.565	0.945	A	1	A	B
78	C,P	Pentachlorophenol	266	7.787	0.972	A	1	A	B
79	T	Dibenzothiophene	184	7.891	0.985	A	1	A	B
80	T	Phenanthrene	178	8.032	1.003	A	1	A	B
81	T	Dinoseb	211	0.000	0.000	A	1	A	B
82	T	Anthracene	178	8.089	1.010	A	1	A	B
83	T	Carbazole	167	8.267	1.032	A	1	A	B
84	T	Di-n-butylphthalate	149	8.659	1.081	A	1	A	B
85	T	1-Methylphenanthrene	192	8.702	1.087	A	1	A	B
86	C,P	Fluoranthene	202	9.311	1.163	A	1	A	B
87	I	Chrysene-d12	240	10.791	1.000	A	1	A	B
88	T	Benzidine	184	0.000	0.000	A	1	A	B
89	T	Pyrene	202	9.547	0.885	A	1	A	B
90	S	Terphenyl-d14	244	9.716	0.900	A	1	A	B
91	T	Butylbenzylphthalate	149	10.218	0.947	A	1	A	B
92	T	bis(2-ethylhexyl)adipate	129	10.299	0.954	A	1	A	B
93	T	3,3'-Dichlorobenzidine	252	10.748	0.996	A	1	A	B
94	T	Benzo(a)anthracene	228	10.777	0.999	A	1	A	B
95	T	Chrysene	228	10.816	1.002	A	1	A	B
96	T	bis(2-Ethylhexyl)phthalate	149	10.801	1.001	A	1	A	B
97	I	Perylene-d12	264	12.218	1.000	A	1	A	B
98	C	Di-n-octylphthalate	149	11.422	0.935	A	1	A	B
99	T	Benzo(b)fluoranthene	252	11.811	0.967	A	1	A	B
100	T	Benzo(k)fluoranthene	252	11.840	0.969	A	1	A	B
101	T	Benzo(e)pyrene	252	12.096	0.990	A	1	A	B
102	C,P	Benzo(a)pyrene	252	12.155	0.995	A	1	A	B
103	T	Perylene	252	12.247	1.002	A	1	A	B
104	T	Indeno(1,2,3-cd)pyrene	276	13.563	1.110	A	1	A	B
105	T	Dibenzo(a,h)anthracene	278	13.587	1.112	A	1	A	B
106	T	Benzo(g,h,i)perylene	276	13.971	1.143	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

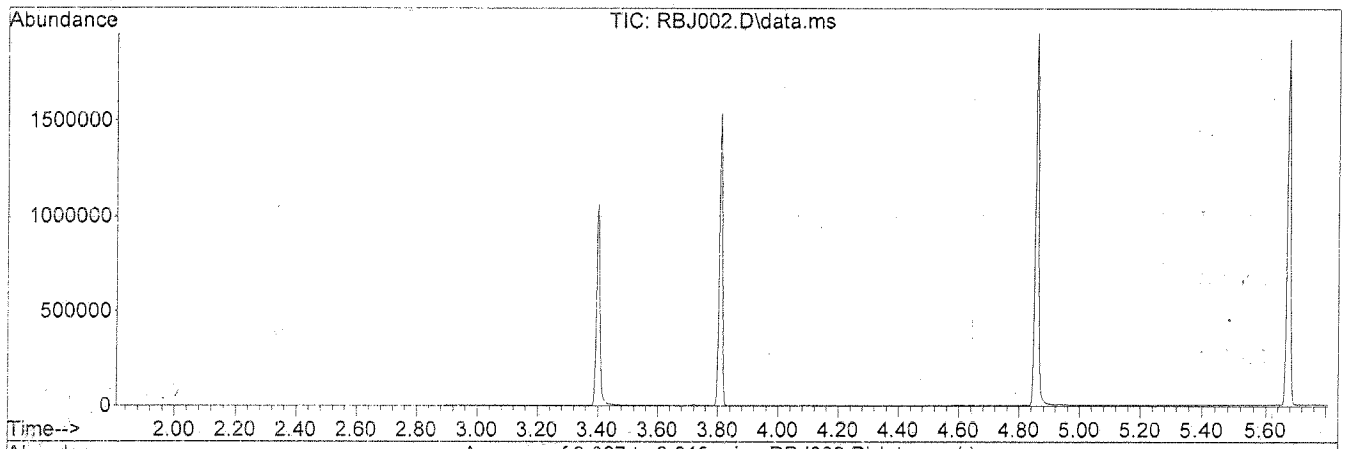
SVE4B02.M Tue Feb 02 13:45:46 2016

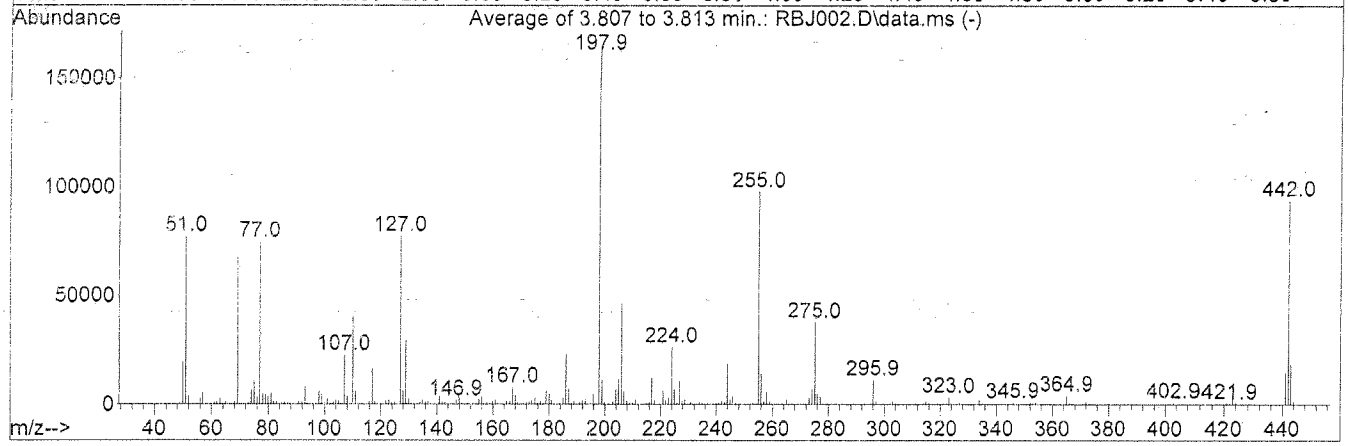
pc 02-08-16

Data Path : D:\DATA\16B02\
Data File : RBJ002.D
Acq On : 2 Feb 2016 8:58
Operator : KVu
Sample : DFTE4B0201
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP 8270D
Last Update : Tue Feb 02 13:55:35 2016





AutoFind: Scans 327, 328, 329; Background Corrected with Scan 319

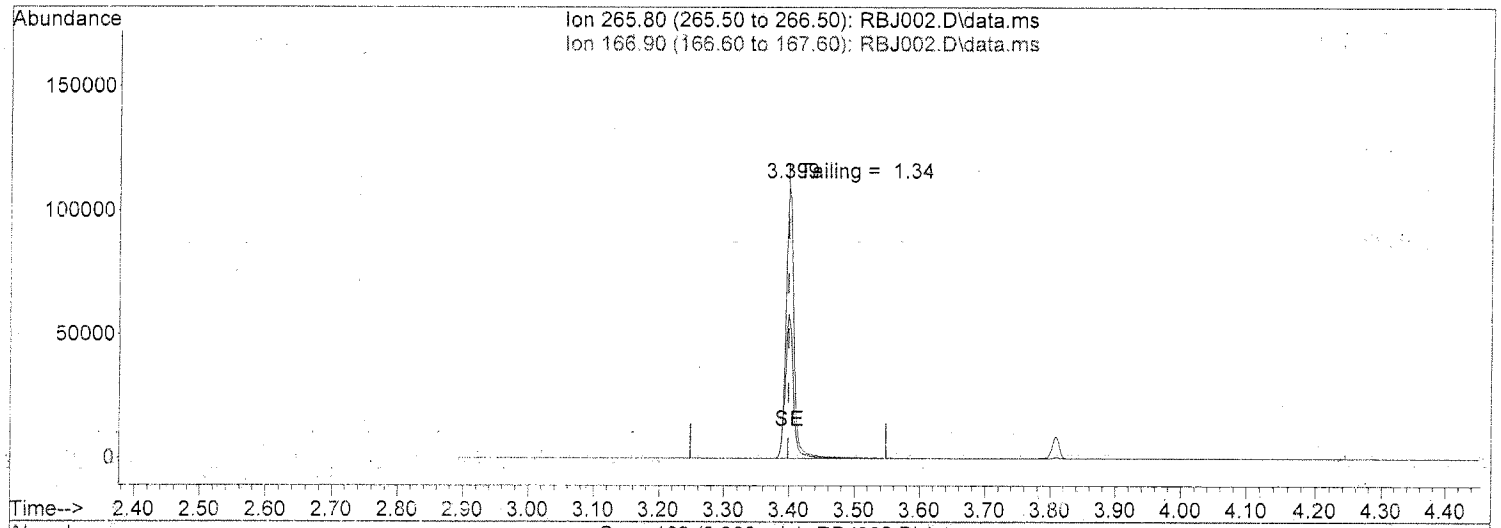
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	47.0	77064	PASS
68	69	0.00	2	1.8	1246	PASS
69	198	0.00	100	41.4	67760	PASS
70	69	0.00	2	0.8	530	PASS
127	198	10	80	47.0	77040	PASS
197	198	0.00	2	0.1	238	PASS
198	198	100	100	100.0	163819	PASS
199	198	5	9	6.7	10948	PASS
275	198	10	60	23.0	37632	PASS
365	198	1	100	2.4	3963	PASS
441	442	0.01	24	15.5	14505	PASS
442	198	50	100	57.2	93643	PASS
443	442	15	24	19.7	18463	PASS

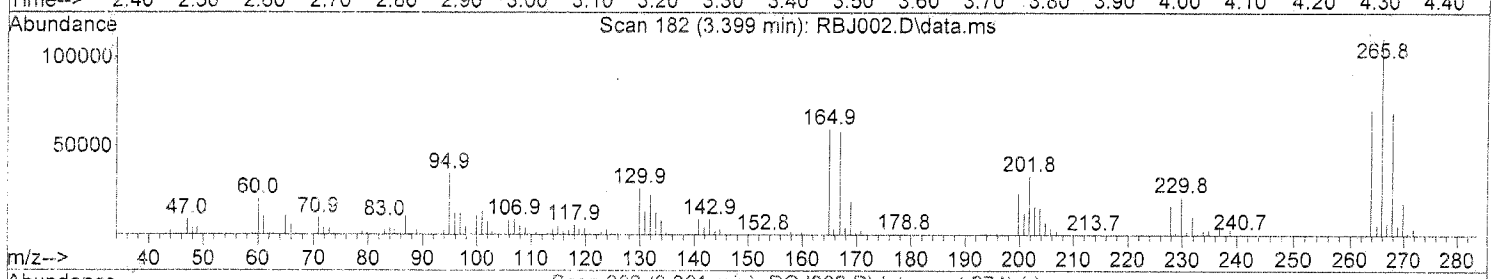
pu 02-08-16

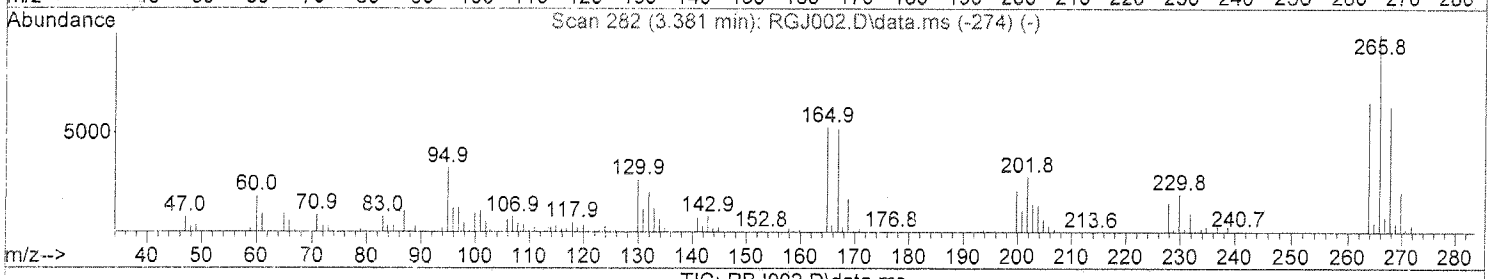
Quantitation Report (Qedit)

Data File : D:\DATA\16B02\RBJ002.D
Acq On : 2 Feb 2016 8:58
Sample : DFTE4B0201
Misc :
Integrator: RTE
Quant Time: Feb 02 13:55:37 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:36 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ002.D\data.ms

(1) Pentachlorophenol (T)

3.399min (+0.000) 50.00 ppm

response 91472

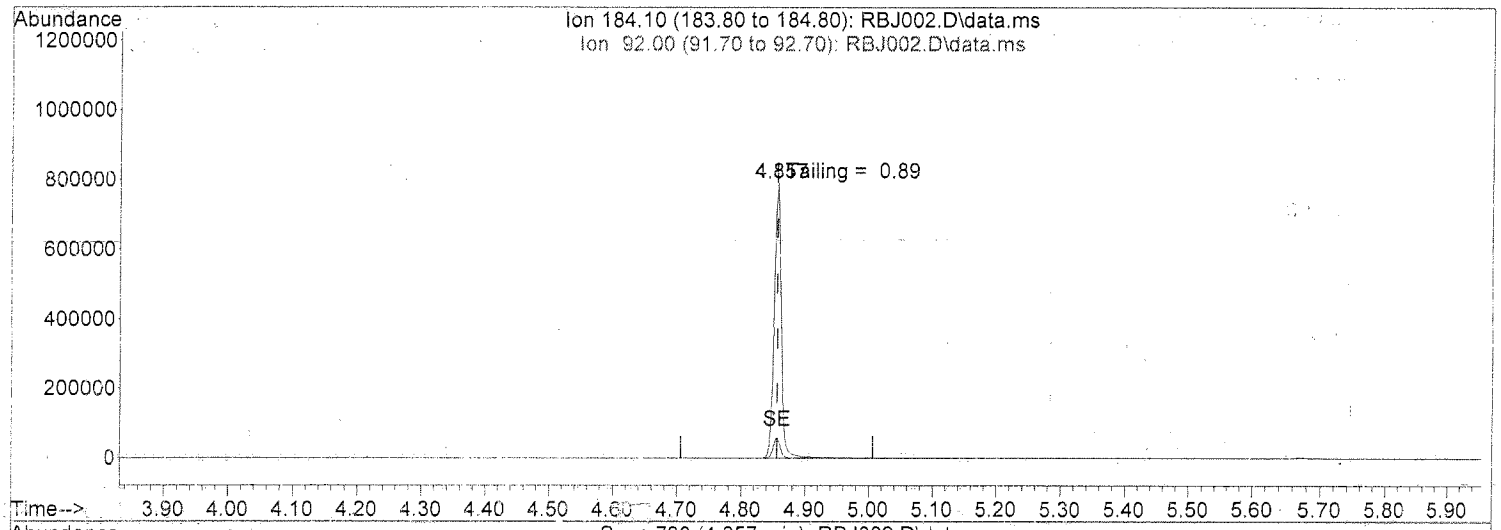
Ion	Exp%	Act%
265.80	100	100
166.90	53.80	53.80
0.00	0.00	0.00
0.00	0.00	0.00

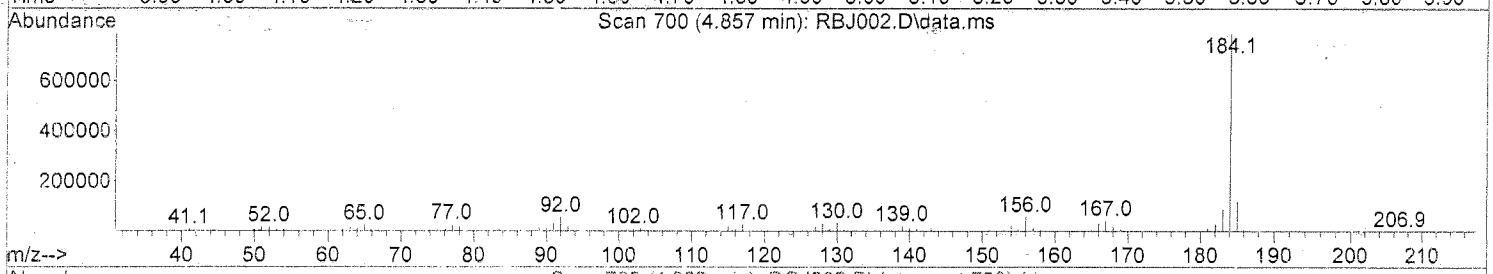
02-08-16

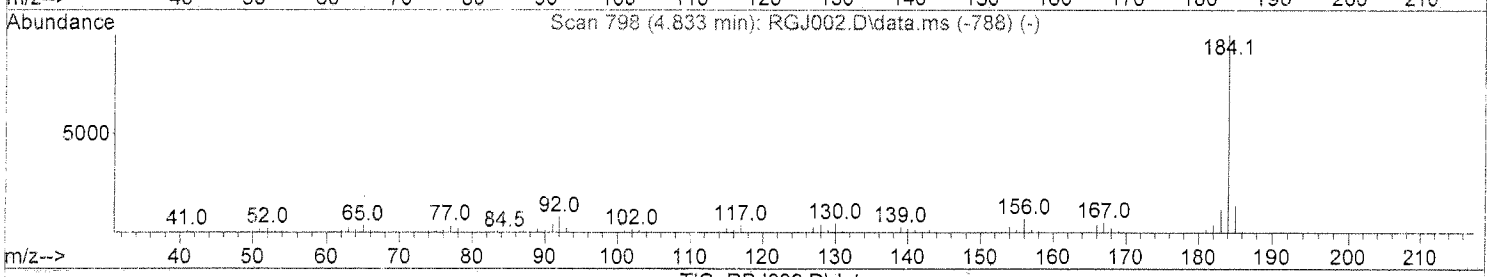
Quantitation Report (Qedit)

Data File : D:\DATA\16B02\RBJ002.D
Acq On : 2 Feb 2016 8:58
Sample : DFTE4B0201
Misc :
Integrator: RTE
Quant Time: Feb 02 13:55:37 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:36 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ002.D\data.ms

(3) Benzidine (T)

4.857min (0.000) 50.00 ppm

response 619113

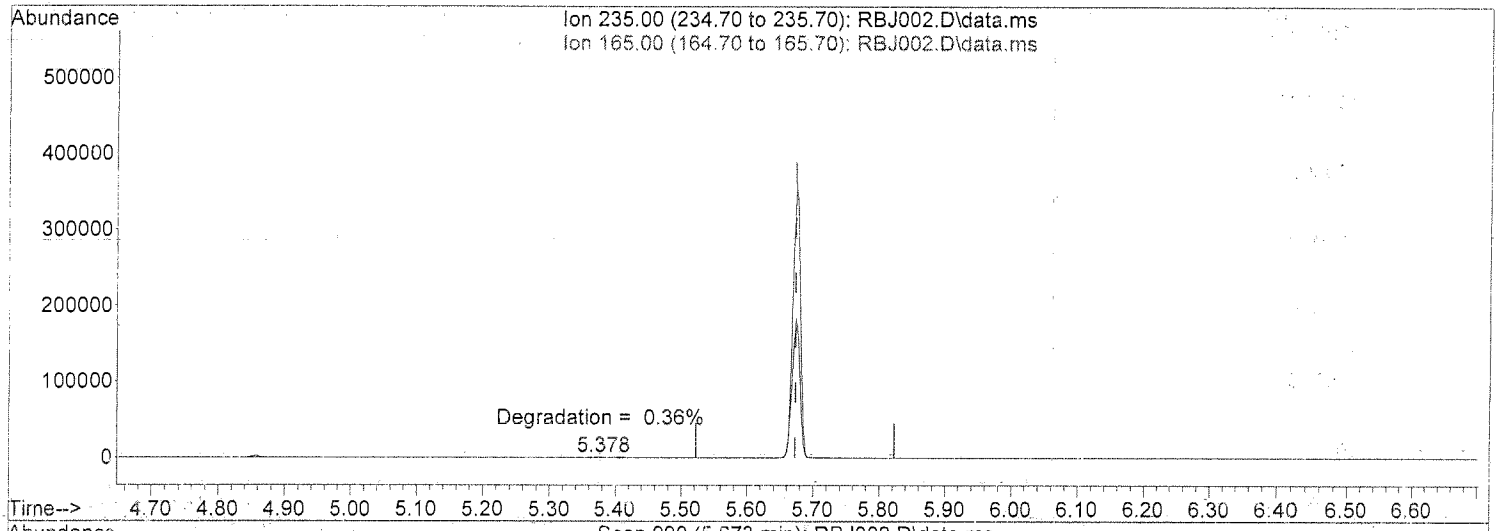
Ion	Exp%	Act%
184.10	100	100
92.00	7.50	7.46
0.00	0.00	0.00
0.00	0.00	0.00

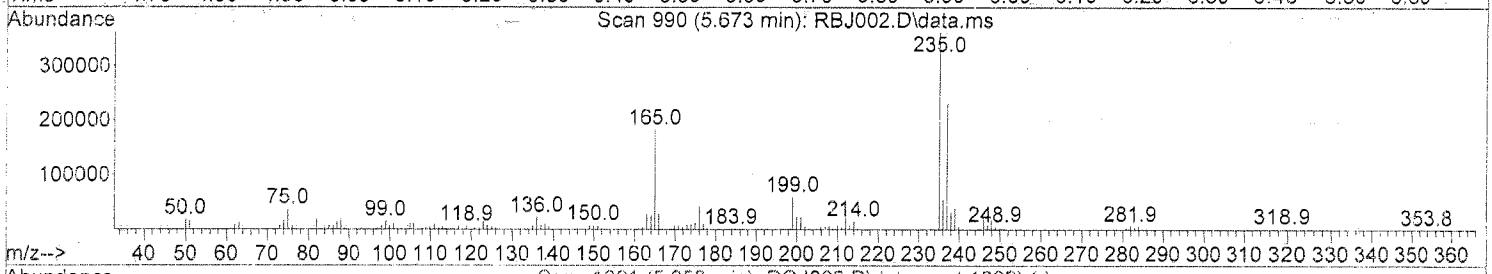
pw 02-08-16

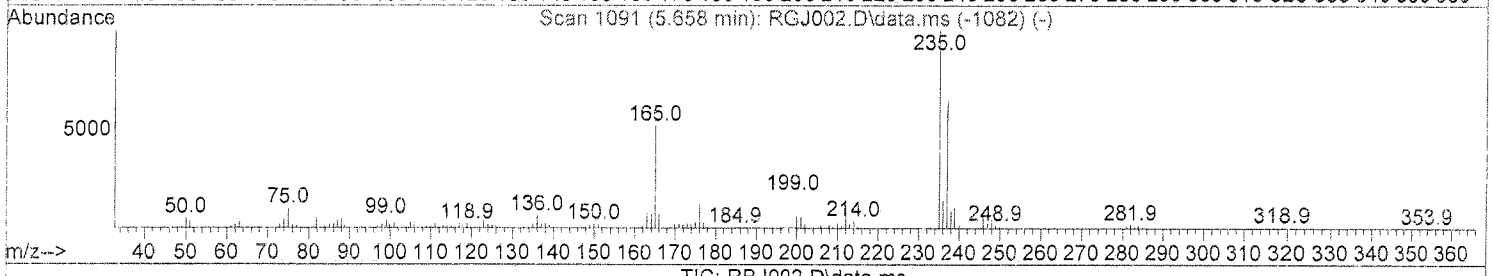
Quantitation Report (Qedit)

Data File : D:\DATA\16B02\RBJ002.D
Acq On : 2 Feb 2016 8:58
Sample : DFTE4B0201
Misc :
Integrator: RTE
Quant Time: Feb 02 13:55:37 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:36 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ002.D\data.ms

(6) DDT (T)

5.673min (0.000) 50.00 ppm

response 287336

Ion	Exp%	Act%
235.00	100	100
165.00	51.10	51.13
0.00	0.00	0.00
0.00	0.00	0.00

m 02-08-16

536

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	432154	40.00	ppm	0.00
21) Naphthalene-d8	4.244	136	1547249	40.00	ppm	0.00
41) Acenaphthene-d10	6.269	164	918028	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1630524	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1830134	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1579900	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	56270	3.96	ppm	0.00
Spiked Amount 30.000			Recovery	=	13.20%	
6) Phenol-d5	2.654	99	69411	3.96	ppm	0.00
Spiked Amount 30.000			Recovery	=	13.20%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.504	82	68600	3.93	ppm	0.00
Spiked Amount 10.000			Recovery	=	39.30%	
46) 2-Fluorobiphenyl	5.461	172	151292	4.13	ppm	0.00
Spiked Amount 10.000			Recovery	=	41.30%	
75) 2,4,6-Tribromophenol	7.210	330	13483	3.44	ppm	0.00
Spiked Amount 30.000			Recovery	=	11.47%	
90) Terphenyl-d14	9.707	244	157297	4.01	ppm	0.00
Spiked Amount 10.000			Recovery	=	40.10%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	29143	4.50	ppm	91
3) N-nitrosodimethylamine	1.477	74	36345	3.96	ppm	94
4) Pyridine	1.505	79	68558	4.15	ppm	97
7) Phenol	2.665	94	73224	4.03	ppm	100
8) Aniline	2.738	93	93791	4.06	ppm	99
9) bis(2-chloroethyl)ether	2.769	93	55513	4.03	ppm	97
10) 2-Chlorophenol	2.837	128	58899	3.84	ppm	93
11) 1,3-Dichlorobenzene	2.972	146	71797	4.02	ppm	96
13) 1,4-Dichlorobenzene	3.030	146	73287	4.04	ppm	98
14) Benzyl alcohol	3.106	108	38157	3.87	ppm	100
15) 1,2-Dichlorobenzene	3.164	146	70328	4.06	ppm	98
16) 2-Methylphenol	3.178	107	50591	4.08	ppm	98
17) bis(2-chloroisopropyl)...	3.226	45	119827	4.18	ppm	99
18) 4-Methylphenol	3.317	107	63038	3.84	ppm	99
19) N-Nitroso-di-n-propyla...	3.341	70	42751	3.72	ppm	91
20) Hexachloroethane	3.475	117	27260	3.93	ppm	95
23) Nitrobenzene	3.523	77	70208	4.01	ppm	97
24) Isophorone	3.749	82	135494	4.03	ppm	95
25) 2-Nitrophenol	3.835	139	24398	3.45	ppm	92
26) 2,4-Dimethylphenol	3.849	107	64645	3.98	ppm	91
27) Benzoic acid	3.878	105	27390	4.50	ppm	77
28) bis(2-Chloroethoxy)met...	3.960	93	72181	4.11	ppm	99
29) 3,5-Dimethylphenol	3.988	107	64358	3.67	ppm	88
30) 2,4-Dichlorophenol	4.075	162	53393	3.88	ppm	99
31) 3,4-Dimethylphenol	4.167	107	77288	4.04	ppm	100
32) 1,2,4-Trichlorobenzene	4.176	180	64711	4.12	ppm	100
33) Naphthalene	4.268	128	178696	4.15	ppm	100
34) 4-Chloroaniline	4.311	127	73097	3.98	ppm	99
35) 2,6-Dichlorophenol	4.321	162	51295	3.94	ppm	100
36) Hexachlorobutadiene	4.393	225	41700	3.97	ppm	99

m 02-08-16

539

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.832	107	49964	3.83	ppm	98
39)	2-Methylnaphthalene	5.034	142	126083	4.16	ppm	100
40)	1-Methylnaphthalene	5.149	142	110276	4.15	ppm	98
42)	Hexachlorocyclopentadiene	5.216	237	42680	3.70	ppm	99
43)	2,3,5-Trichlorophenol	5.220	196	32884	3.35	ppm	98
44)	2,4,6-Trichlorophenol	5.350	196	38949	3.73	ppm	100
45)	2,4,5-Trichlorophenol	5.389	196	40981	3.73	ppm	99
47)	2,3,4-Trichlorophenol	5.466	196	37526	3.90	ppm	92
48)	Biphenyl	5.582	154	155802	4.17	ppm	100
49)	2-Chloronaphthalene	5.601	162	124512	4.05	ppm	99
50)	2-Nitroaniline	5.716	65	30748	3.55	ppm	100
51)	2,6-Dimethylnaphthalene	5.769	156	108318	4.09	ppm	100
52)	1,4-Dinitrobenzene	5.884	168	12540	3.29	ppm	99
53)	Dimethylphthalate	5.947	163	135780	4.02	ppm	99
54)	1,3-Dinitrobenzene	5.971	168	14934	3.31	ppm	88
55)	2,6-Dinitrotoluene	6.009	165	26092	3.77	ppm	98
56)	1,2-Dinitrobenzene	6.067	168	10358	3.56	ppm	99
57)	Acenaphthylene	6.096	152	190343	3.91	ppm	96
58)	3-Nitroaniline	6.207	138	26777	3.70	ppm	98
59)	Acenaphthene	6.308	153	125181	4.11	ppm	100
60)	2,4-Dinitrophenol	6.332	184	6150	4.50	ppm	97
61)	4-Nitrophenol	6.394	109	15334	3.24	ppm	99
62)	2,4-Dinitrotoluene	6.495	165	30972	3.45	ppm	97
63)	Dibenzofuran	6.514	168	177830	4.11	ppm	99
64)	2,3,5,6-Tetrachlorophenol	6.605	230	25009	3.49	ppm	96
65)	2,3,4,6-Tetrachlorophenol	6.657	232	36700	3.72	ppm	88
66)	2,3,5-Trimethylnaphtha...	6.767	170	99855	4.03	ppm	99
67)	Diethylphthalate	6.804	149	135865	3.97	ppm	99
68)	Fluorene	6.926	166	137588	4.08	ppm	99
69)	4-Chlorophenyl-phenyle...	6.936	204	69827	4.07	ppm	99
70)	4-Nitroaniline	6.936	138	26352	3.54	ppm	92
72)	4,6-Dinitro-2-methylph...	6.978	198	10957	4.16	ppm	99
73)	N-Nitrosodiphenylamine	7.072	169	112554	4.04	ppm	100
74)	Azobenzene	7.124	77	132536	4.05	ppm	99
76)	4-Bromophenyl-phenylether	7.504	248	40235	4.11	ppm	95
77)	Hexachlorobenzene	7.560	284	40522	4.07	ppm	98
78)	Pentachlorophenol	7.787	266	17804	3.13	ppm	98
79)	Dibenzothiophene	7.886	184	208037	4.14	ppm	99
80)	Phenanthrene	8.032	178	210651	4.12	ppm	100
82)	Anthracene	8.084	178	204329	3.97	ppm	100
83)	Carbazole	8.263	167	177876	4.06	ppm	100
84)	Di-n-butylphthalate	8.659	149	197641	3.72	ppm	100
85)	1-Methylphenanthrene	8.697	192	144115	3.97	ppm	100
86)	Fluoranthene	9.306	202	227717	3.95	ppm	99
89)	Pyrene	9.542	202	245502	3.92	ppm	96
91)	Butylbenzylphthalate	10.218	149	65997	3.11	ppm	98
92)	bis(2-ethylhexyl)adipate	10.295	129	56046	3.21	ppm	94
93)	3,3'-Dichlorobenzidine	10.743	252	66927	3.55	ppm	95
94)	Benzo(a)anthracene	10.772	228	225775	3.99	ppm	99
95)	Chrysene	10.806	228	214346	4.10	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.796	149	115001	3.51	ppm	99
98)	Di-n-octylphthalate	11.417	149	166019	3.09	ppm	99
99)	Benzo(b)fluoranthene	11.801	252	199736	3.94	ppm	98
100)	Benzo(k)fluoranthene	11.830	252	199481	3.91	ppm	97
101)	Benzo(e)pyrene	12.086	252	181471	3.88	ppm	96

pm 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.140	252	185290	3.85 ppm	97
103) Perylene	12.237	252	188683	3.91 ppm	97
104) Indeno(1,2,3-cd)pyrene	13.544	276	194400	3.65 ppm	95
105) Dibenzo(a,h)anthracene	13.568	278	165976	3.74 ppm	98
106) Benzo(g,h,i)perylene	13.942	276	181505	3.96 ppm	96

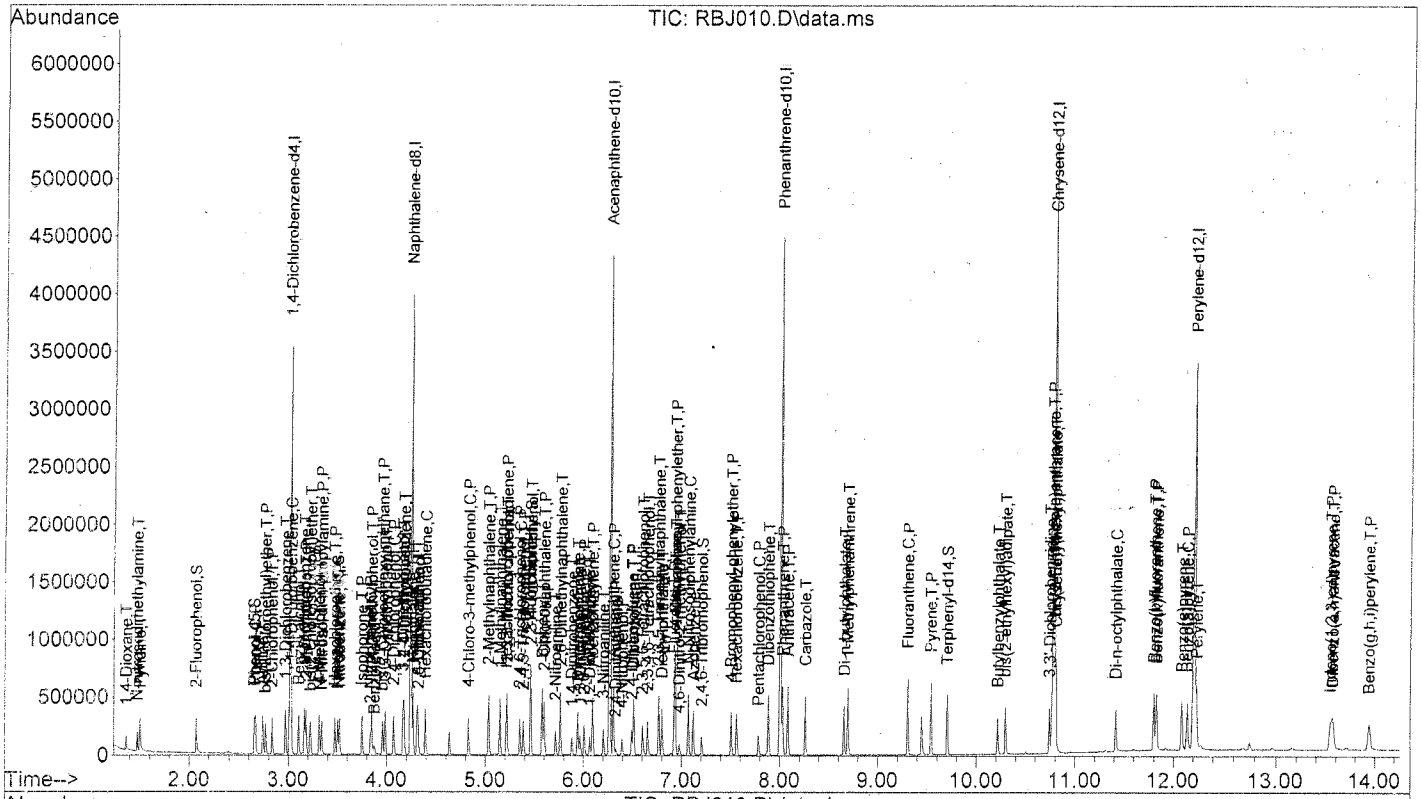
(#) = qualifier out of range (m) = manual integration (+) = signals summed

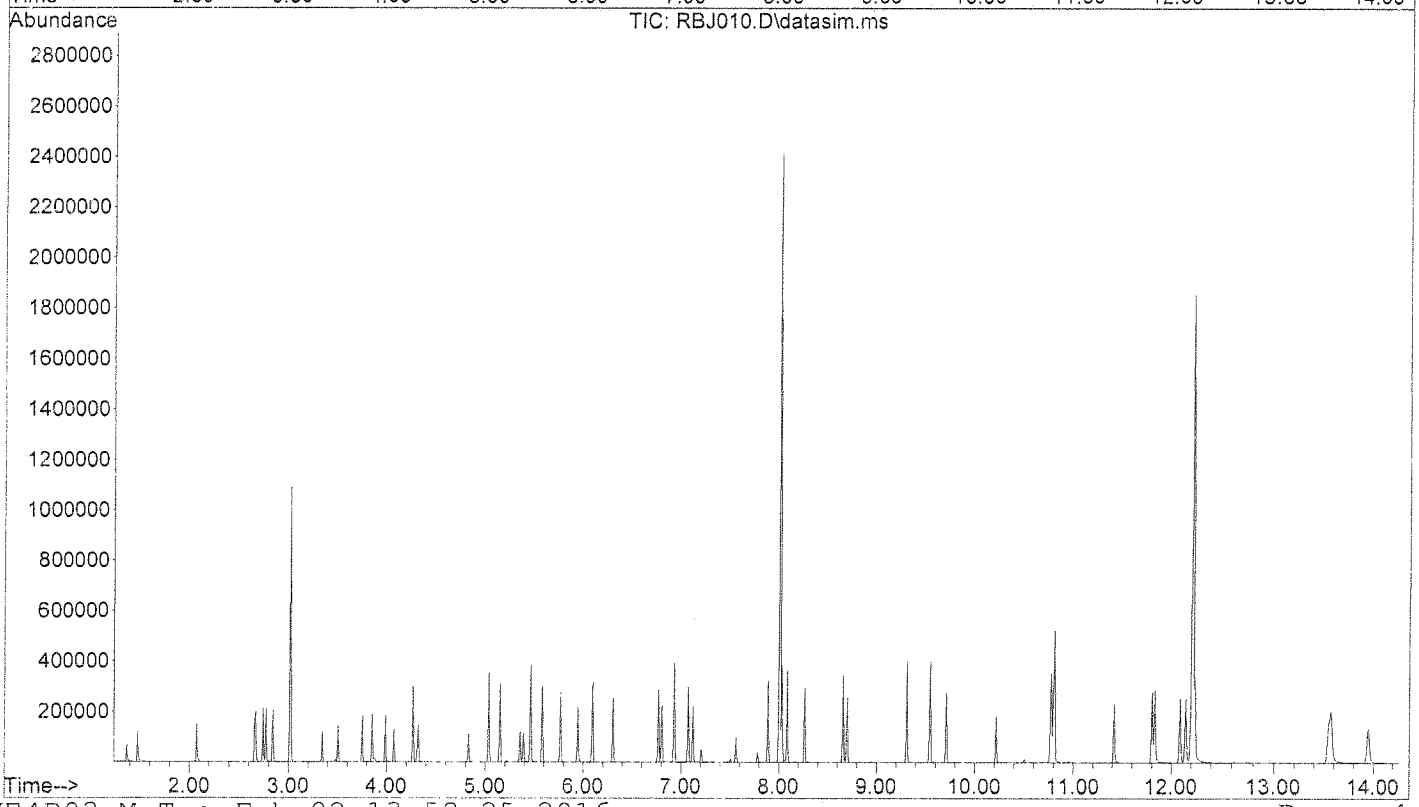
pu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ010.D
Acq On : 2 Feb 2016 11:23
Sample : SVE4B028
Misc : 4PPM
Integrator: RTE
Quant Time: Feb 02 13:51:58 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 10
Operator: KVu
Inst : E4
Multiplr: 1.00





M 02-08-16 SR

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	432450	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1552213	40.00	ppm	0.00
41) Acenaphthene-d10	6.269	164	916662	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1649622	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1883963	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1610421	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	140279	9.88	ppm	0.00
Spiked Amount 30.000			Recovery	=	32.93%	
6) Phenol-d5	2.654	99	171821	9.79	ppm	0.00
Spiked Amount 30.000			Recovery	=	32.63%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.504	82	172971	9.88	ppm	0.00
Spiked Amount 10.000			Recovery	=	98.80%	
46) 2-Fluorobiphenyl	5.461	172	370670	10.12	ppm	0.00
Spiked Amount 10.000			Recovery	=	101.20%	
75) 2,4,6-Tribromophenol	7.210	330	38436	9.70	ppm	0.00
Spiked Amount 30.000			Recovery	=	32.33%	
90) Terphenyl-d14	9.711	244	397992	9.87	ppm	0.00
Spiked Amount 10.000			Recovery	=	98.70%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	65915	10.18	ppm	94
3) N-nitrosodimethylamine	1.477	74	90964	9.90	ppm	96
4) Pyridine	1.501	79	171264	10.36	ppm	100
7) Phenol	2.670	94	179267	9.86	ppm	100
8) Aniline	2.743	93	231796	10.02	ppm	98
9) bis(2-chloroethyl)ether	2.769	93	136883	9.93	ppm	97
10) 2-Chlorophenol	2.837	128	147732	9.63	ppm	91
11) 1,3-Dichlorobenzene	2.972	146	178852	10.00	ppm	100
13) 1,4-Dichlorobenzene	3.030	146	180267	9.93	ppm	100
14) Benzyl alcohol	3.106	108	98381	9.98	ppm	97
15) 1,2-Dichlorobenzene	3.164	146	175135	10.10	ppm	99
16) 2-Methylphenol	3.183	107	123043	9.92	ppm	97
17) bis(2-chloroisopropyl)...	3.226	45	286526	9.98	ppm	99
18) 4-Methylphenol	3.317	107	159309	9.69	ppm	100
19) N-Nitroso-di-n-propyla...	3.346	70	109909	9.55	ppm	99
20) Hexachloroethane	3.475	117	67693	9.76	ppm	97
23) Nitrobenzene	3.523	77	173735	9.88	ppm	100
24) Isophorone	3.754	82	334210	9.92	ppm	95
25) 2-Nitrophenol	3.835	139	69035	9.73	ppm	100
26) 2,4-Dimethylphenol	3.849	107	162468	9.97	ppm	100
27) Benzoic acid	3.902	105	74723	8.88	ppm	96
28) bis(2-Chloroethoxy)met...	3.964	93	175670	9.97	ppm	99
29) 3,5-Dimethylphenol	3.988	107	159077	9.05	ppm	89
30) 2,4-Dichlorophenol	4.075	162	136150	9.86	ppm	100
31) 3,4-Dimethylphenol	4.167	107	191207	9.96	ppm	100
32) 1,2,4-Trichlorobenzene	4.176	180	160111	10.15	ppm	98
33) Naphthalene	4.268	128	432811	10.01	ppm	99
34) 4-Chloroaniline	4.311	127	185544	10.07	ppm	99
35) 2,6-Dichlorophenol	4.321	162	130994	10.02	ppm	100
36) Hexachlorobutadiene	4.393	225	104042	9.88	ppm	100

AM 02-08-16

343

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.832	107	125029	9.54	ppm	100
39)	2-Methylnaphthalene	5.038	142	304959	10.02	ppm	99
40)	1-Methylnaphthalene	5.153	142	265903	9.98	ppm	100
42)	Hexachlorocyclopentadiene	5.216	237	111546	9.69	ppm	98
43)	2,3,5-Trichlorophenol	5.220	196	99382	10.14	ppm	93
44)	2,4,6-Trichlorophenol	5.355	196	101021	9.69	ppm	100
45)	2,4,5-Trichlorophenol	5.389	196	107898	9.84	ppm	100
47)	2,3,4-Trichlorophenol	5.466	196	97362	10.13	ppm	92
48)	Biphenyl	5.582	154	378136	10.13	ppm	100
49)	2-Chloronaphthalene	5.606	162	306309	9.97	ppm	100
50)	2-Nitroaniline	5.716	65	84104	9.71	ppm	98
51)	2,6-Dimethylnaphthalene	5.769	156	266195	10.07	ppm	99
52)	1,4-Dinitrobenzene	5.889	168	35109	9.24	ppm	97
53)	Dimethylphthalate	5.947	163	335476	9.94	ppm	99
54)	1,3-Dinitrobenzene	5.971	168	43557	9.67	ppm	84
55)	2,6-Dinitrotoluene	6.014	165	67449	9.77	ppm	100
56)	1,2-Dinitrobenzene	6.072	168	28363	9.75	ppm	95
57)	Acenaphthylene	6.096	152	478275	9.84	ppm	97
58)	3-Nitroaniline	6.212	138	72590	10.06	ppm	99
59)	Acenaphthene	6.308	153	306337	10.07	ppm	100
60)	2,4-Dinitrophenol	6.332	184	20968	8.85	ppm	95
61)	4-Nitrophenol	6.399	109	45441	9.62	ppm	98
62)	2,4-Dinitrotoluene	6.495	165	88726	9.89	ppm	100
63)	Dibenzofuran	6.519	168	436604	10.10	ppm	99
64)	2,3,5,6-Tetrachlorophenol	6.605	230	67143	9.38	ppm	96
65)	2,3,4,6-Tetrachlorophenol	6.658	232	95767	9.72	ppm	98
66)	2,3,5-Trimethylnaphtha...	6.772	170	246984	9.98	ppm	100
67)	Diethylphthalate	6.809	149	339260	9.92	ppm	100
68)	Fluorene	6.931	166	339996	10.10	ppm	99
69)	4-Chlorophenyl-phenyle...	6.936	204	172024	10.03	ppm	100
70)	4-Nitroaniline	6.945	138	69865	9.41	ppm	93
72)	4,6-Dinitro-2-methylph...	6.983	198	41439	9.57	ppm	91
73)	N-Nitrosodiphenylamine	7.072	169	278207	9.87	ppm	100
74)	Azobenzene	7.124	77	329221	9.96	ppm	100
76)	4-Bromophenyl-phenylether	7.504	248	95585	9.65	ppm	100
77)	Hexachlorobenzene	7.565	284	99183	9.84	ppm	99
78)	Pentachlorophenol	7.787	266	53727	9.32	ppm	100
79)	Dibenzothiophene	7.886	184	508550	9.99	ppm	99
80)	Phenanthrene	8.032	178	514891	9.95	ppm	100
82)	Anthracene	8.089	178	521480	10.00	ppm	100
83)	Carbazole	8.263	167	445140	10.05	ppm	99
84)	Di-n-butylphthalate	8.659	149	537668	10.01	ppm	100
85)	1-Methylphenanthrene	8.697	192	368981	10.05	ppm	99
86)	Fluoranthene	9.306	202	580678	9.96	ppm	100
89)	Pyrene	9.542	202	624119	9.69	ppm	97
91)	Butylbenzylphthalate	10.218	149	206790	9.47	ppm	99
92)	bis(2-ethylhexyl)adipate	10.295	129	175717	9.78	ppm	99
93)	3,3'-Dichlorobenzidine	10.743	252	188298	9.70	ppm	99
94)	Benzo(a)anthracene	10.772	228	567854	9.76	ppm	100
95)	Chrysene	10.811	228	534898	9.94	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.796	149	330326	9.80	ppm	99
98)	Di-n-octylphthalate	11.417	149	526484	9.62	ppm	100
99)	Benzo(b)fluoranthene	11.806	252	490757	9.50	ppm	97
100)	Benzo(k)fluoranthene	11.830	252	523980	10.07	ppm	99
101)	Benzo(e)pyrene	12.086	252	468874	9.84	ppm	99

02-08-16

SUB

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.145	252	476447	9.72 ppm	99
103) Perylene	12.237	252	497379	10.11 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.548	276	525166	9.67 ppm	97
105) Dibenzo(a,h)anthracene	13.573	278	432511	9.56 ppm	99
106) Benzo(g,h,i)perylene	13.952	276	448274	9.60 ppm	99

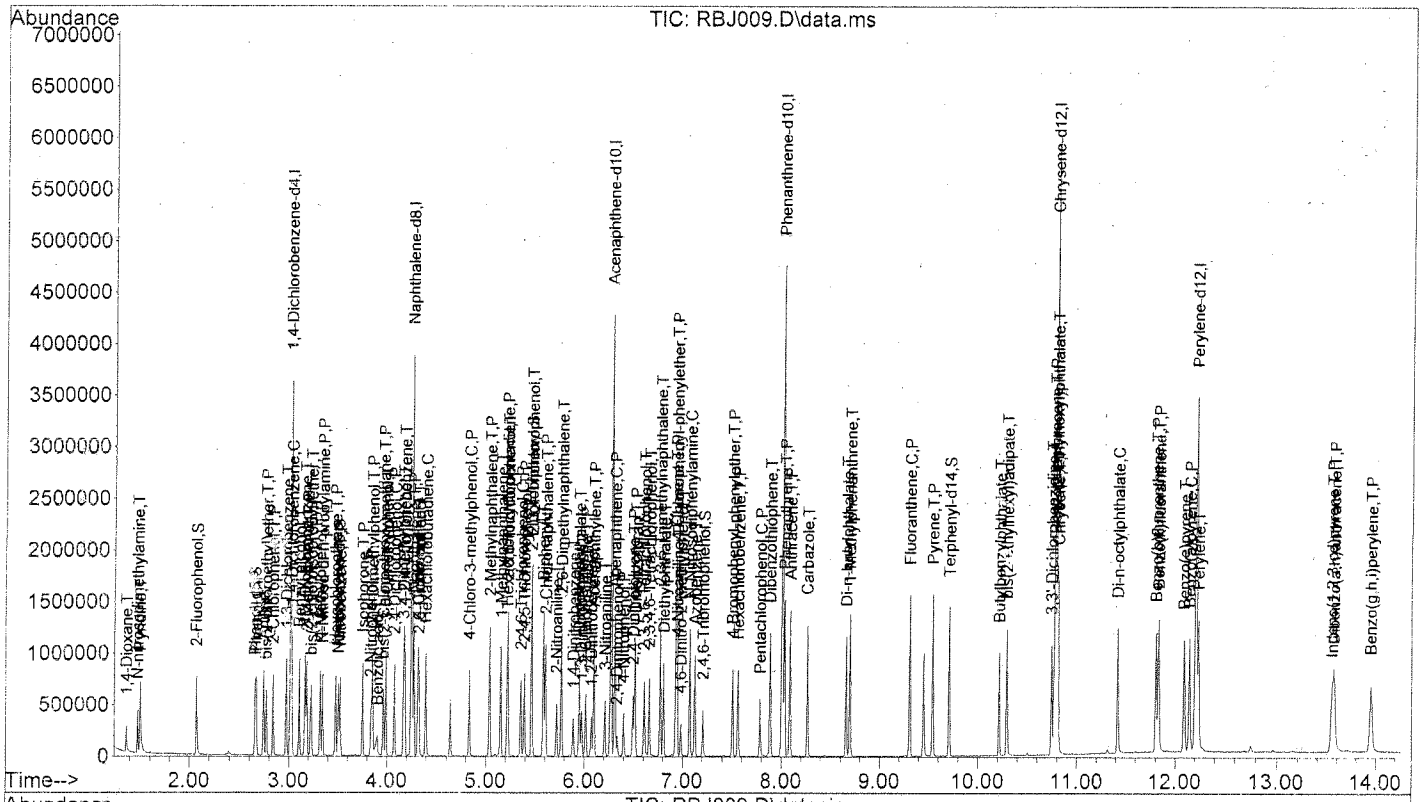
(#) = qualifier out of range (m) = manual integration (+) = signals summed

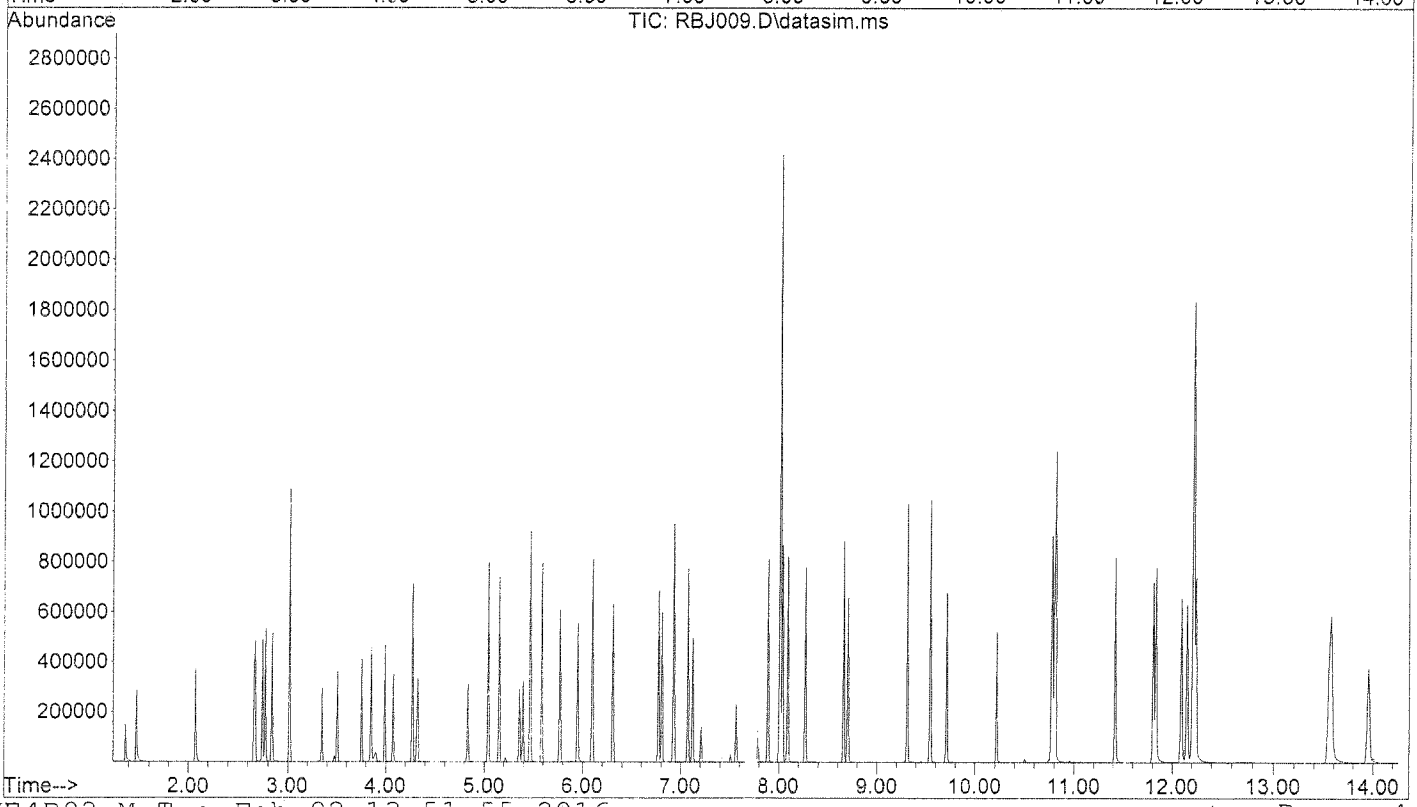
Pu
02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ009.D
Acq On : 2 Feb 2016 11:04
Sample : SVE4B027
Misc : 10PPM
Integrator: RTE
Quant Time: Feb 02 13:51:32 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 9
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

546

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	428154	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1558094	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	937266	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1665411	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1881471	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1593531	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	283094	20.13	ppm	0.00
Spiked Amount 30.000			Recovery = 67.10%			
6) Phenol-d5	2.659	99	349111	20.10	ppm	0.00
Spiked Amount 30.000			Recovery = 67.00%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.509	82	349734	19.89	ppm	0.00
Spiked Amount 10.000			Recovery = 198.90%			
46) 2-Fluorobiphenyl	5.466	172	754125	20.14	ppm	0.00
Spiked Amount 10.000			Recovery = 201.40%			
75) 2,4,6-Tribromophenol	7.210	330	81476	20.36	ppm	0.00
Spiked Amount 30.000			Recovery = 67.87%			
90) Terphenyl-d14	9.711	244	814806	20.23	ppm	0.00
Spiked Amount 10.000			Recovery = 202.30%			
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	125790	19.62	ppm	97
3) N-nitrosodimethylamine	1.477	74	184133	20.23	ppm	100
4) Pyridine	1.505	79	344170	21.02	ppm	100
7) Phenol	2.670	94	366939	20.38	ppm	99
8) Aniline	2.743	93	465184	20.31	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	274624	20.13	ppm	97
10) 2-Chlorophenol	2.837	128	300545	19.79	ppm	92
11) 1,3-Dichlorobenzene	2.972	146	355670	20.08	ppm	99
13) 1,4-Dichlorobenzene	3.030	146	365340	20.32	ppm	98
14) Benzyl alcohol	3.106	108	201878	20.68	ppm	97
15) 1,2-Dichlorobenzene	3.164	146	345956	20.15	ppm	100
16) 2-Methylphenol	3.183	107	249283	20.29	ppm	98
17) bis(2-chloroisopropyl)...	3.226	45	577025	20.31	ppm	100
18) 4-Methylphenol	3.322	107	328221	20.16	ppm	99
19) N-Nitroso-di-n-propyla...	3.351	70	226081	19.85	ppm	89
20) Hexachloroethane	3.475	117	140037	20.39	ppm	99
23) Nitrobenzene	3.528	77	356221	20.18	ppm	99
24) Isophorone	3.758	82	673516	19.91	ppm	96
25) 2-Nitrophenol	3.840	139	146825	20.61	ppm	100
26) 2,4-Dimethylphenol	3.854	107	328997	20.11	ppm	100
27) Benzoic acid	3.926	105	189390	19.45	ppm	100
28) bis(2-Chloroethoxy)met...	3.964	93	355943	20.12	ppm	100
29) 3,5-Dimethylphenol	3.993	107	367404	20.82	ppm	98
30) 2,4-Dichlorophenol	4.075	162	280702	20.25	ppm	99
31) 3,4-Dimethylphenol	4.171	107	388185	20.15	ppm	100
32) 1,2,4-Trichlorobenzene	4.176	180	318145	20.10	ppm	99
33) Naphthalene	4.268	128	865405	19.93	ppm	99
34) 4-Chloroaniline	4.311	127	375483	20.31	ppm	100
35) 2,6-Dichlorophenol	4.321	162	265237	20.22	ppm	100
36) Hexachlorobutadiene	4.393	225	209089	19.77	ppm	100

pm 02-08-16

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.837	107	267867	20.37	ppm	99
39) 2-Methylnaphthalene	5.038	142	611361	20.01	ppm	100
40) 1-Methylnaphthalene	5.153	142	539702	20.18	ppm	100
42) Hexachlorocyclopentadiene	5.216	237	237957	20.22	ppm	99
43) 2,3,5-Trichlorophenol	5.225	196	192179	19.18	ppm	98
44) 2,4,6-Trichlorophenol	5.355	196	217047	20.36	ppm	100
45) 2,4,5-Trichlorophenol	5.389	196	222289	19.83	ppm	97
47) 2,3,4-Trichlorophenol	5.466	196	198111	20.16	ppm	99
48) Biphenyl	5.582	154	764093	20.02	ppm	100
49) 2-Chloronaphthalene	5.606	162	618208	19.69	ppm	100
50) 2-Nitroaniline	5.721	65	181708	20.52	ppm	99
51) 2,6-Dimethylnaphthalene	5.769	156	538153	19.91	ppm	100
52) 1,4-Dinitrobenzene	5.889	168	79245	20.39	ppm	100
53) Dimethylphthalate	5.952	163	702261	20.35	ppm	100
54) 1,3-Dinitrobenzene	5.976	168	95871	20.82	ppm	100
55) 2,6-Dinitrotoluene	6.019	165	142468	20.19	ppm	98
56) 1,2-Dinitrobenzene	6.077	168	60772	20.44	ppm	96
57) Acenaphthylene	6.101	152	977048	19.65	ppm	97
58) 3-Nitroaniline	6.212	138	149163	20.21	ppm	100
59) Acenaphthene	6.312	153	621920	19.99	ppm	100
60) 2,4-Dinitrophenol	6.336	184	57236	19.12	ppm	98
61) 4-Nitrophenol	6.403	109	99934	20.68	ppm	99
62) 2,4-Dinitrotoluene	6.499	165	186930	20.37	ppm	98
63) Dibenzofuran	6.518	168	883647	20.00	ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.610	230	149307	20.40	ppm	100
65) 2,3,4,6-Tetrachlorophenol	6.657	232	201661	20.02	ppm	99
66) 2,3,5-Trimethylnaphtha...	6.771	170	512432	20.26	ppm	98
67) Diethylphthalate	6.809	149	703583	20.12	ppm	100
68) Fluorene	6.931	166	692140	20.11	ppm	100
69) 4-Chlorophenyl-phenyle...	6.940	204	353455	20.16	ppm	100
70) 4-Nitroaniline	6.950	138	146240	19.26	ppm	92
72) 4,6-Dinitro-2-methylph...	6.987	198	99852	19.79	ppm	99
73) N-Nitrosodiphenylamine	7.077	169	580914	20.41	ppm	99
74) Azobenzene	7.124	77	681791	20.42	ppm	99
76) 4-Bromophenyl-phenylether	7.509	248	202916	20.29	ppm	97
77) Hexachlorobenzene	7.565	284	204970	20.14	ppm	99
78) Pentachlorophenol	7.787	266	120819	20.77	ppm	97
79) Dibenzothiophene	7.891	184	1042782	20.30	ppm	100
80) Phenanthrene	8.032	178	1058636	20.26	ppm	100
82) Anthracene	8.089	178	1062373	20.19	ppm	100
83) Carbazole	8.267	167	904501	20.23	ppm	100
84) Di-n-butylphthalate	8.659	149	1109535	20.47	ppm	100
85) 1-Methylphenanthrene	8.702	192	749657	20.23	ppm	100
86) Fluoranthene	9.311	202	1198440	20.36	ppm	100
89) Pyrene	9.547	202	1270820	19.75	ppm	98
91) Butylbenzylphthalate	10.218	149	461082	21.14	ppm	99
92) bis(2-ethylhexyl)adipate	10.299	129	379082	21.13	ppm	99
93) 3,3'-Dichlorobenzidine	10.747	252	393987	20.33	ppm	100
94) Benzo(a)anthracene	10.777	228	1161369	19.98	ppm	99
95) Chrysene	10.811	228	1077310	20.05	ppm	100
96) bis(2-Ethylhexyl)phtha...	10.796	149	698693	20.75	ppm	100
98) Di-n-octylphthalate	11.422	149	1148944	21.23	ppm	100
99) Benzo(b)fluoranthene	11.806	252	1020241	19.96	ppm	98
100) Benzo(k)fluoranthene	11.835	252	1062346	20.63	ppm	98
101) Benzo(e)pyrene	12.091	252	954148	20.23	ppm	100

KU 02-08-16

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.150	252	980871	20.22 ppm	100
103) Perylene	12.242	252	992878	20.39 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.558	276	1092772	20.34 ppm	99
105) Dibenzo(a,h)anthracene	13.578	278	908152	20.29 ppm	96
106) Benzo(g,h,i)perylene	13.961	276	922591	19.98 ppm	99

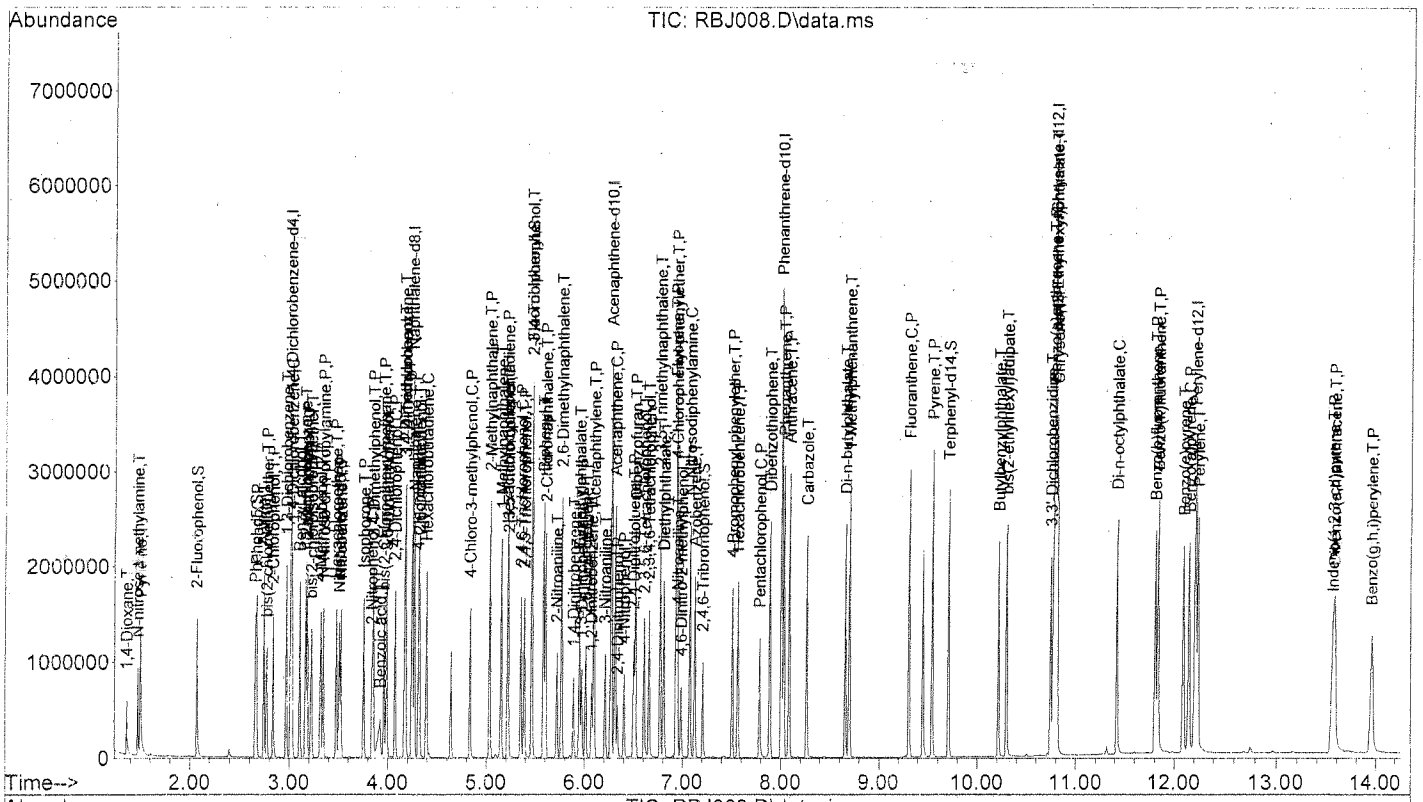
(#) = qualifier out of range (m) = manual integration (+) = signals summed

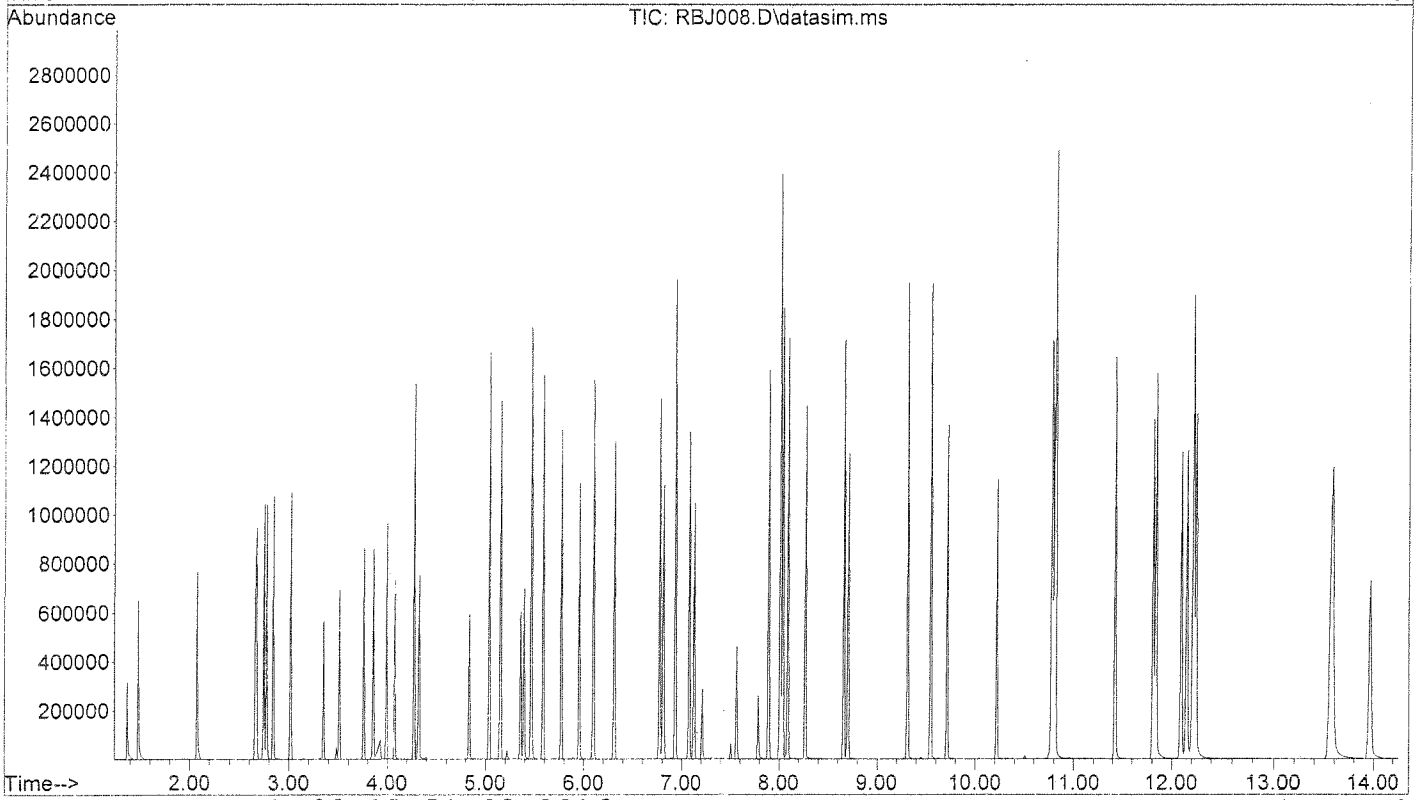
KU 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ008.D
Acq On : 2 Feb 2016 10:44
Sample : SVE4B026
Misc : 20PPM
Integrator: RTE
Quant Time: Feb 02 13:50:35 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 8
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	424119	40.00	ppm	0.00
21) Naphthalene-d8	4.248	136	1535126	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	929909	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1694673	40.00	ppm	0.00
87) Chrysene-d12	10.791	240	1850796	40.00	ppm	0.00
97) Perylene-d12	12.218	264	1601653	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.070	112	354826	25.47	ppm	0.00
Spiked Amount 30.000			Recovery	=	84.90%	
6) Phenol-d5	2.659	99	444707	25.85	ppm	0.00
Spiked Amount 30.000			Recovery	=	86.17%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.509	82	443426	25.60	ppm	0.00
Spiked Amount 10.000			Recovery	=	256.00%	
46) 2-Fluorobiphenyl	5.466	172	926819	24.95	ppm	0.00
Spiked Amount 10.000			Recovery	=	249.50%	
75) 2,4,6-Tribromophenol	7.210	330	105926	26.01	ppm	0.00
Spiked Amount 30.000			Recovery	=	86.70%	
90) Terphenyl-d14	9.716	244	1002718	25.31	ppm	0.00
Spiked Amount 10.000			Recovery	=	253.10%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	154397	24.31	ppm	100
3) N-nitrosodimethylamine	1.476	74	231180	25.65	ppm	100
4) Pyridine	1.505	79	431323	26.60	ppm	100
7) Phenol	2.670	94	455147	25.53	ppm	100
8) Aniline	2.743	93	579830	25.56	ppm	100
9) bis(2-chloroethyl)ether	2.774	93	349605	25.87	ppm	100
10) 2-Chlorophenol	2.836	128	374480	24.89	ppm	100
11) 1,3-Dichlorobenzene	2.972	146	446663	25.46	ppm	100
13) 1,4-Dichlorobenzene	3.029	146	451681	25.36	ppm	100
14) Benzyl alcohol	3.111	108	247443	25.59	ppm	100
15) 1,2-Dichlorobenzene	3.164	146	434934	25.57	ppm	100
16) 2-Methylphenol	3.183	107	309070	25.40	ppm	100
17) bis(2-chloroisopropyl)...	3.231	45	713143	25.34	ppm	100
18) 4-Methylphenol	3.322	107	410016	25.43	ppm	100
19) N-Nitroso-di-n-propyla...	3.351	70	282588	25.04	ppm	100
20) Hexachloroethane	3.475	117	175072	25.73	ppm	100
23) Nitrobenzene	3.528	77	443600	25.51	ppm	100
24) Isophorone	3.758	82	848649	25.47	ppm	100
25) 2-Nitrophenol	3.840	139	187889	26.77	ppm	100
26) 2,4-Dimethylphenol	3.854	107	412636	25.60	ppm	100
27) Benzoic acid	3.936	105	244315	24.87	ppm	100
28) bis(2-Chloroethoxy)met...	3.964	93	443423	25.44	ppm	100
29) 3,5-Dimethylphenol	3.993	107	461551	26.55	ppm	100
30) 2,4-Dichlorophenol	4.080	162	350246	25.64	ppm	100
31) 3,4-Dimethylphenol	4.171	107	484984	25.55	ppm	100
32) 1,2,4-Trichlorobenzene	4.181	180	391350	25.09	ppm	100
33) Naphthalene	4.273	128	1082083	25.30	ppm	100
34) 4-Chloroaniline	4.316	127	466212	25.59	ppm	100
35) 2,6-Dichlorophenol	4.326	162	330379	25.56	ppm	100
36) Hexachlorobutadiene	4.393	225	264825	25.42	ppm	100

tm 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.837	107	332581	25.67	ppm	100
39)	2-Methylnaphthalene	5.038	142	763316	25.36	ppm	100
40)	1-Methylnaphthalene	5.153	142	667130	25.32	ppm	100
42)	Hexachlorocyclopentadiene	5.220	237	296837	25.43	ppm	100
43)	2,3,5-Trichlorophenol	5.225	196	259286	26.08	ppm	100
44)	2,4,6-Trichlorophenol	5.355	196	269089	25.44	ppm	100
45)	2,4,5-Trichlorophenol	5.393	196	286388	25.75	ppm	100
47)	2,3,4-Trichlorophenol	5.471	196	245575	25.19	ppm	100
48)	Biphenyl	5.586	154	951236	25.12	ppm	100
49)	2-Chloronaphthalene	5.605	162	765314	24.57	ppm	100
50)	2-Nitroaniline	5.720	65	229569	26.13	ppm	100
51)	2,6-Dimethylnaphthalene	5.773	156	678941	25.31	ppm	100
52)	1,4-Dinitrobenzene	5.889	168	102809	26.66	ppm	100
53)	Dimethylphthalate	5.956	163	859276	25.10	ppm	100
54)	1,3-Dinitrobenzene	5.980	168	121237	26.54	ppm	100
55)	2,6-Dinitrotoluene	6.019	165	179361	25.62	ppm	100
56)	1,2-Dinitrobenzene	6.082	168	78075	26.47	ppm	100
57)	Acenaphthylene	6.101	152	1321731	26.80	ppm	100
58)	3-Nitroaniline	6.216	138	187414	25.59	ppm	100
59)	Acenaphthene	6.312	153	777060	25.17	ppm	100
60)	2,4-Dinitrophenol	6.341	184	76766	24.89	ppm	100
61)	4-Nitrophenol	6.408	109	125188	26.11	ppm	100
62)	2,4-Dinitrotoluene	6.504	165	239877	26.35	ppm	100
63)	Dibenzofuran	6.518	168	1100450	25.10	ppm	100
64)	2,3,5,6-Tetrachlorophenol	6.609	230	190633	26.25	ppm	100
65)	2,3,4,6-Tetrachlorophenol	6.662	232	254771	25.50	ppm	100
66)	2,3,5-Trimethylnaphtha...	6.776	170	632123	25.19	ppm	100
67)	Diethylphthalate	6.813	149	882992	25.45	ppm	100
68)	Fluorene	6.935	166	860095	25.19	ppm	100
69)	4-Chlorophenyl-phenyle...	6.940	204	436210	25.08	ppm	100
70)	4-Nitroaniline	6.954	138	201632	26.77	ppm	100
72)	4,6-Dinitro-2-methylph...	6.987	198	132589	25.16	ppm	100
73)	N-Nitrosodiphenylamine	7.077	169	726507	25.09	ppm	100
74)	Azobenzene	7.129	77	847806	24.96	ppm	100
76)	4-Bromophenyl-phenylether	7.508	248	252950	24.86	ppm	100
77)	Hexachlorobenzene	7.565	284	256084	24.73	ppm	100
78)	Pentachlorophenol	7.787	266	157240	26.56	ppm	100
79)	Dibenzothiophene	7.891	184	1303111	24.93	ppm	100
80)	Phenanthrene	8.032	178	1328491	24.99	ppm	100
82)	Anthracene	8.089	178	1355084	25.31	ppm	100
83)	Carbazole	8.267	167	1138959	25.03	ppm	100
84)	Di-n-butylphthalate	8.659	149	1424955	25.83	ppm	100
85)	1-Methylphenanthrene	8.702	192	950870	25.22	ppm	100
86)	Fluoranthene	9.311	202	1501837	25.07	ppm	100
89)	Pyrene	9.547	202	1679485	26.54	ppm	100
91)	Butylbenzylphthalate	10.218	149	577299	26.91	ppm	100
92)	bis(2-ethylhexyl)adipate	10.299	129	471027	26.69	ppm	100
93)	3,3'-Dichlorobenzidine	10.748	252	494507	25.94	ppm	100
94)	Benzo(a)anthracene	10.777	228	1445279	25.28	ppm	100
95)	Chrysene	10.816	228	1325857	25.08	ppm	100
96)	bis(2-Ethylhexyl)phtha..	10.801	149	865260	26.12	ppm	100
98)	Di-n-octylphthalate	11.422	149	1447152	26.60	ppm	100
99)	Benzo(b)fluoranthene	11.811	252	1342364	26.13	ppm	100
100)	Benzo(k)fluoranthene	11.840	252	1268363	24.50	ppm	100
101)	Benzo(e)pyrene	12.096	252	1206708	25.46	ppm	100

RU 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.155	252	1235377	25.33 ppm	100
103) Perylene	12.247	252	1233135	25.20 ppm	100
104) Indeno(1,2,3-cd)pyrene	13.563	276	1386533	25.68 ppm	100
105) Dibenzo(a,h)anthracene	13.587	278	1159025	25.76 ppm	100
106) Benzo(g,h,i)perylene	13.971	276	1177656	25.37 ppm	100

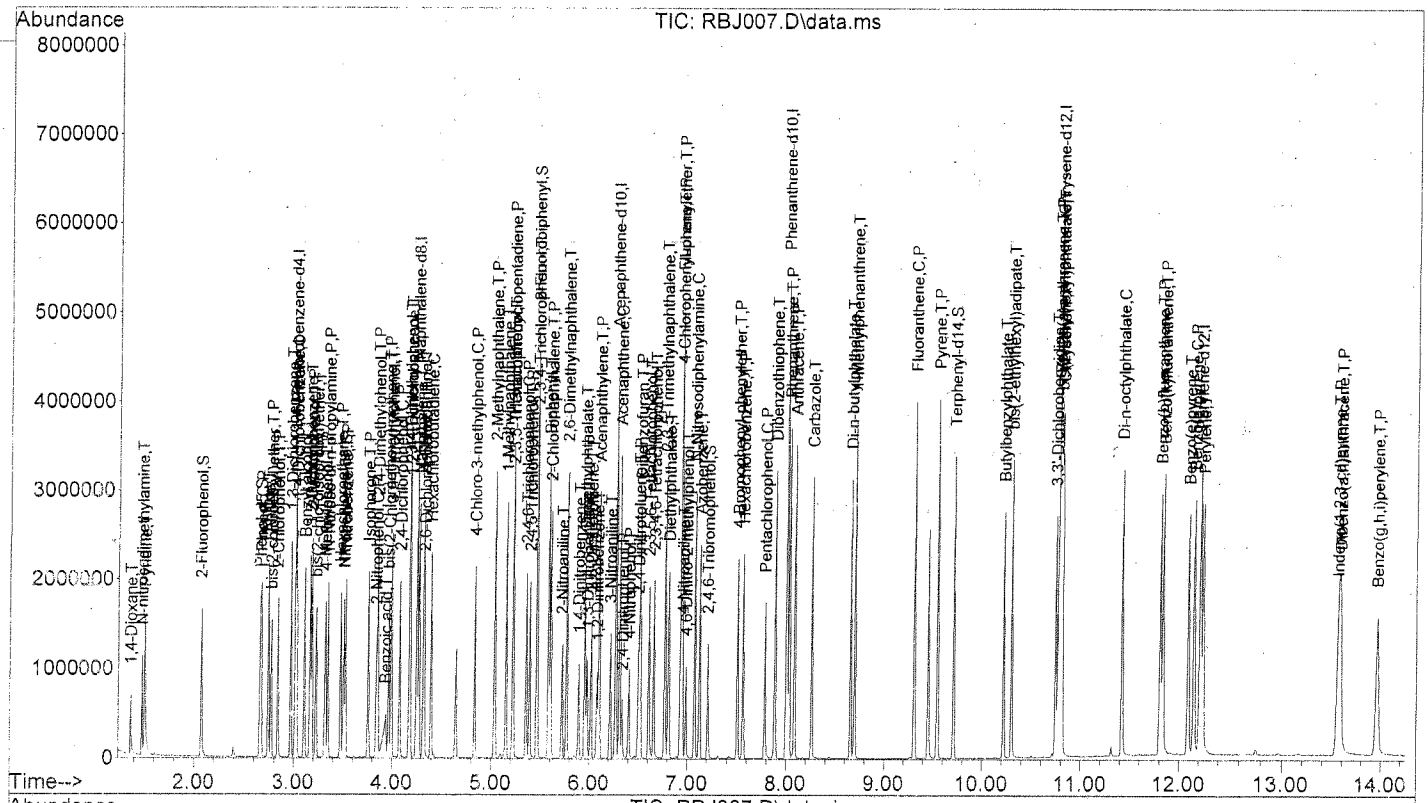
(#) = qualifier out of range (m) = manual integration (+) = signals summed

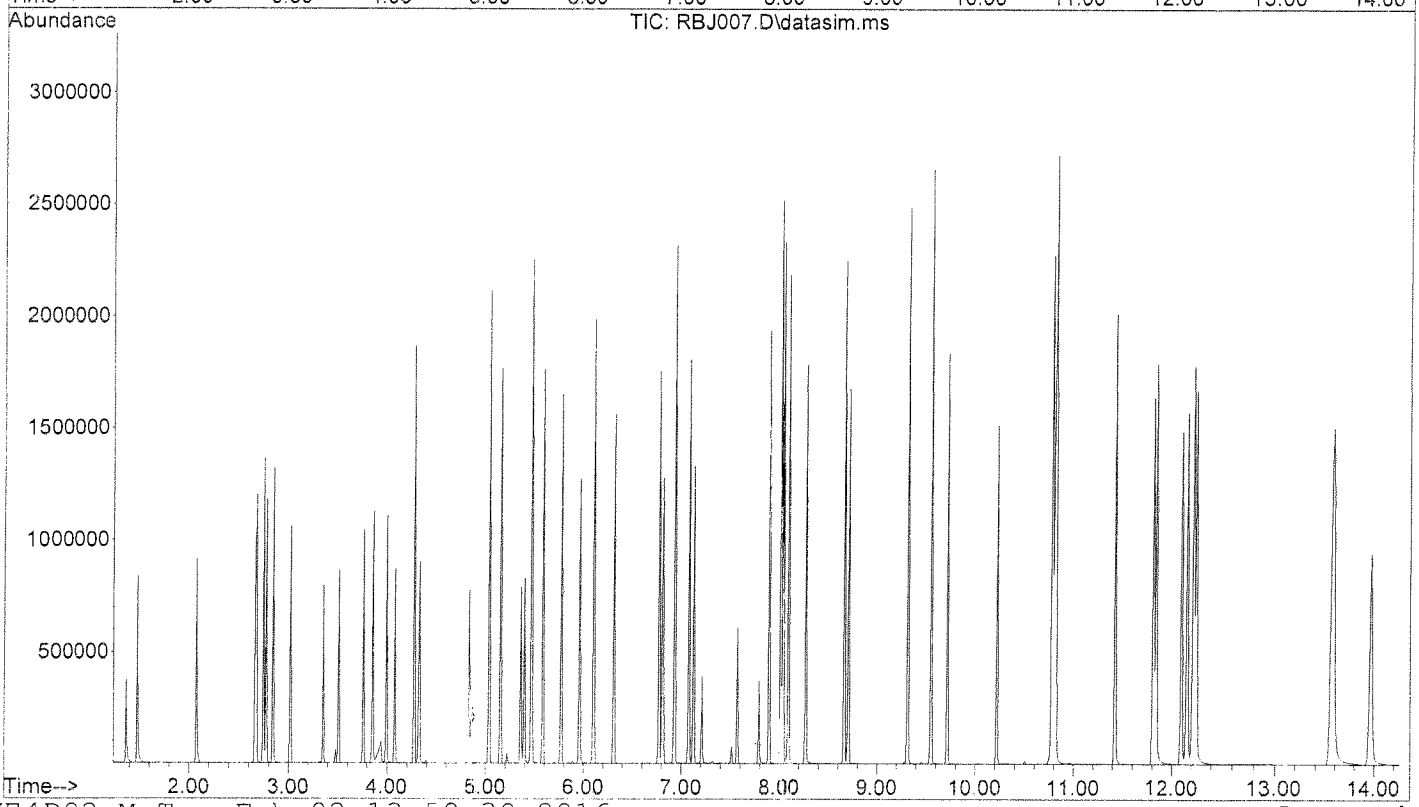
KVu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ007.D
Acq On : 2 Feb 2016 10:25
Sample : SVE4B025
Misc : 25PPM
Integrator: RTE
Quant Time: Feb 02 13:49:57 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 7
Operator: KVu
Inst : E4
Multiplr: 1.00





RU 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	455852	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1618791	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	966999	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1728695	40.00	ppm	0.00
87) Chrysene-d12	10.791	240	1903162	40.00	ppm	0.00
97) Perylene-d12	12.217	264	1635198	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.075	112	597502	39.91	ppm	0.00
Spiked Amount 30.000			Recovery	=	133.03%	
6) Phenol-d5	2.664	99	736322	39.82	ppm	0.00
Spiked Amount 30.000			Recovery	=	132.73%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.509	82	740214	40.52	ppm	0.00
Spiked Amount 10.000			Recovery	=	405.20%	
46) 2-Fluorobiphenyl	5.471	172	1511033	39.11	ppm	0.00
Spiked Amount 10.000			Recovery	=	391.10%	
75) 2,4,6-Tribromophenol	7.214	330	176721	42.54	ppm	0.00
Spiked Amount 30.000			Recovery	=	141.80%	
90) Terphenyl-d14	9.716	244	1641579	40.29	ppm	0.00
Spiked Amount 10.000			Recovery	=	402.90%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	258378	37.85	ppm	97
3) N-nitrosodimethylamine	1.477	74	382077	39.43	ppm	100
4) Pyridine	1.500	79	723731	41.53	ppm	100
7) Phenol	2.675	94	754581	39.37	ppm	100
8) Aniline	2.748	93	954883	39.16	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	573719	39.50	ppm	99
10) 2-Chlorophenol	2.842	128	675096	41.75	ppm	94
11) 1,3-Dichlorobenzene	2.972	146	750710	39.82	ppm	100
13) 1,4-Dichlorobenzene	3.029	146	758428	39.61	ppm	99
14) Benzyl alcohol	3.111	108	412504	39.68	ppm	100
15) 1,2-Dichlorobenzene	3.164	146	714240	39.07	ppm	99
16) 2-Methylphenol	3.188	107	514968	39.37	ppm	99
17) bis(2-chloroisopropyl)...	3.231	45	1179656	38.99	ppm	100
18) 4-Methylphenol	3.327	107	741045	42.76	ppm	93
19) N-Nitroso-di-n-propyla...	3.356	70	525189	43.30	ppm	100
20) Hexachloroethane	3.480	117	291976	39.93	ppm	97
23) Nitrobenzene	3.533	77	734167	40.03	ppm	99
24) Isophorone	3.763	82	1431467	40.74	ppm	99
25) 2-Nitrophenol	3.840	139	313641	42.38	ppm	99
26) 2,4-Dimethylphenol	3.859	107	681106	40.07	ppm	98
27) Benzoic acid	3.964	105	432819	40.45	ppm	99
28) bis(2-Chloroethoxy)met...	3.969	93	725913	39.50	ppm	99
29) 3,5-Dimethylphenol	3.998	107	779383	42.51	ppm	97
30) 2,4-Dichlorophenol	4.080	162	582172	40.42	ppm	100
31) 3,4-Dimethylphenol	4.176	107	792777	39.61	ppm	99
32) 1,2,4-Trichlorobenzene	4.181	180	647830	39.38	ppm	99
33) Naphthalene	4.273	128	1775939	39.37	ppm	100
34) 4-Chloroaniline	4.321	127	759311	39.53	ppm	100
35) 2,6-Dichlorophenol	4.326	162	546132	40.07	ppm	99
36) Hexachlorobutadiene	4.398	225	444406	40.45	ppm	99

TM 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.837	107	565737	41.40 ppm	99
39) 2-Methylnaphthalene	5.043	142	1247141	39.30 ppm	100
40) 1-Methylnaphthalene	5.153	142	1094524	39.39 ppm	100
42) Hexachlorocyclopentadiene	5.220	237	507703	41.82 ppm	100
43) 2,3,5-Trichlorophenol	5.225	196	445511	43.09 ppm	92
44) 2,4,6-Trichlorophenol	5.360	196	454187	41.30 ppm	100
45) 2,4,5-Trichlorophenol	5.394	196	479889	41.49 ppm	99
47) 2,3,4-Trichlorophenol	5.471	196	406310	40.08 ppm	98
48) Biphenyl	5.586	154	1540616	39.12 ppm	100
49) 2-Chloronaphthalene	5.610	162	1248171	38.53 ppm	100
50) 2-Nitroaniline	5.725	65	382441	41.86 ppm	100
51) 2,6-Dimethylnaphthalene	5.773	156	1103888	39.58 ppm	100
52) 1,4-Dinitrobenzene	5.894	168	175498	43.76 ppm	98
53) Dimethylphthalate	5.961	163	1424930	40.02 ppm	100
54) 1,3-Dinitrobenzene	5.985	168	201145	42.34 ppm	99
55) 2,6-Dinitrotoluene	6.024	165	298897	41.05 ppm	97
56) 1,2-Dinitrobenzene	6.087	168	126747	41.32 ppm	92
57) Acenaphthylene	6.106	152	1965201	38.31 ppm	96
58) 3-Nitroaniline	6.221	138	310362	40.76 ppm	96
59) Acenaphthene	6.317	153	1272674	39.65 ppm	100
60) 2,4-Dinitrophenol	6.346	184	137386	40.89 ppm	96
61) 4-Nitrophenol	6.413	109	209011	41.92 ppm	99
62) 2,4-Dinitrotoluene	6.509	165	392257	41.43 ppm	99
63) Dibenzofuran	6.523	168	1802631	39.54 ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.609	230	323981	42.90 ppm	99
65) 2,3,4,6-Tetrachlorophenol	6.662	232	433866	41.76 ppm	100
66) 2,3,5-Trimethylnaphtha...	6.776	170	1039615	39.83 ppm	98
67) Diethylphthalate	6.814	149	1438543	39.88 ppm	100
68) Fluorene	6.935	166	1397315	39.36 ppm	99
69) 4-Chlorophenyl-phenyle...	6.940	204	716025	39.59 ppm	99
70) 4-Nitroaniline	6.959	138	330600	42.21 ppm	99
72) 4,6-Dinitro-2-methylph...	6.996	198	222458	39.97 ppm	96
73) N-Nitrosodiphenylamine	7.082	169	1179136	39.92 ppm	100
74) Azobenzene	7.129	77	1375496	39.69 ppm	100
76) 4-Bromophenyl-phenylether	7.508	248	414926	39.98 ppm	99
77) Hexachlorobenzene	7.570	284	425171	40.26 ppm	98
78) Pentachlorophenol	7.792	266	265467	43.96 ppm	99
79) Dibenzothiophene	7.896	184	2087183	39.14 ppm	96
80) Phenanthrene	8.037	178	2141125	39.48 ppm	100
82) Anthracene	8.093	178	2171274	39.75 ppm	100
83) Carbazole	8.267	167	1811495	39.03 ppm	99
84) Di-n-butylphthalate	8.663	149	2265847	40.26 ppm	100
85) 1-Methylphenanthrene	8.707	192	1510806	39.28 ppm	100
86) Fluoranthene	9.316	202	2417949	39.56 ppm	100
89) Pyrene	9.552	202	2647993	40.69 ppm	100
91) Butylbenzylphthalate	10.222	149	956176	43.34 ppm	100
92) bis(2-ethylhexyl)adipate	10.299	129	770126	42.44 ppm	100
93) 3,3'-Dichlorobenzidine	10.752	252	815601	41.60 ppm	100
94) Benzo(a)anthracene	10.781	228	2375285	40.40 ppm	100
95) Chrysene	10.820	228	2149749	39.55 ppm	99
96) bis(2-Ethylhexyl)phtha...	10.801	149	1418818	41.65 ppm	100
98) Di-n-octylphthalate	11.422	149	2402172	43.25 ppm	100
99) Benzo(b)fluoranthene	11.816	252	2084476	39.75 ppm	98
100) Benzo(k)fluoranthene	11.845	252	2187101	41.39 ppm	98
101) Benzo(e)pyrene	12.101	252	1952148	40.34 ppm	99

pu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.159	252	2040196	40.98 ppm	99
103) Perylene	12.251	252	1985264	39.73 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.573	276	2290053	41.54 ppm	100
105) Dibenzo(a,h)anthracene	13.597	278	1906773	41.51 ppm	97
106) Benzo(g,h,i)perylene	13.980	276	1937273	40.88 ppm	99

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

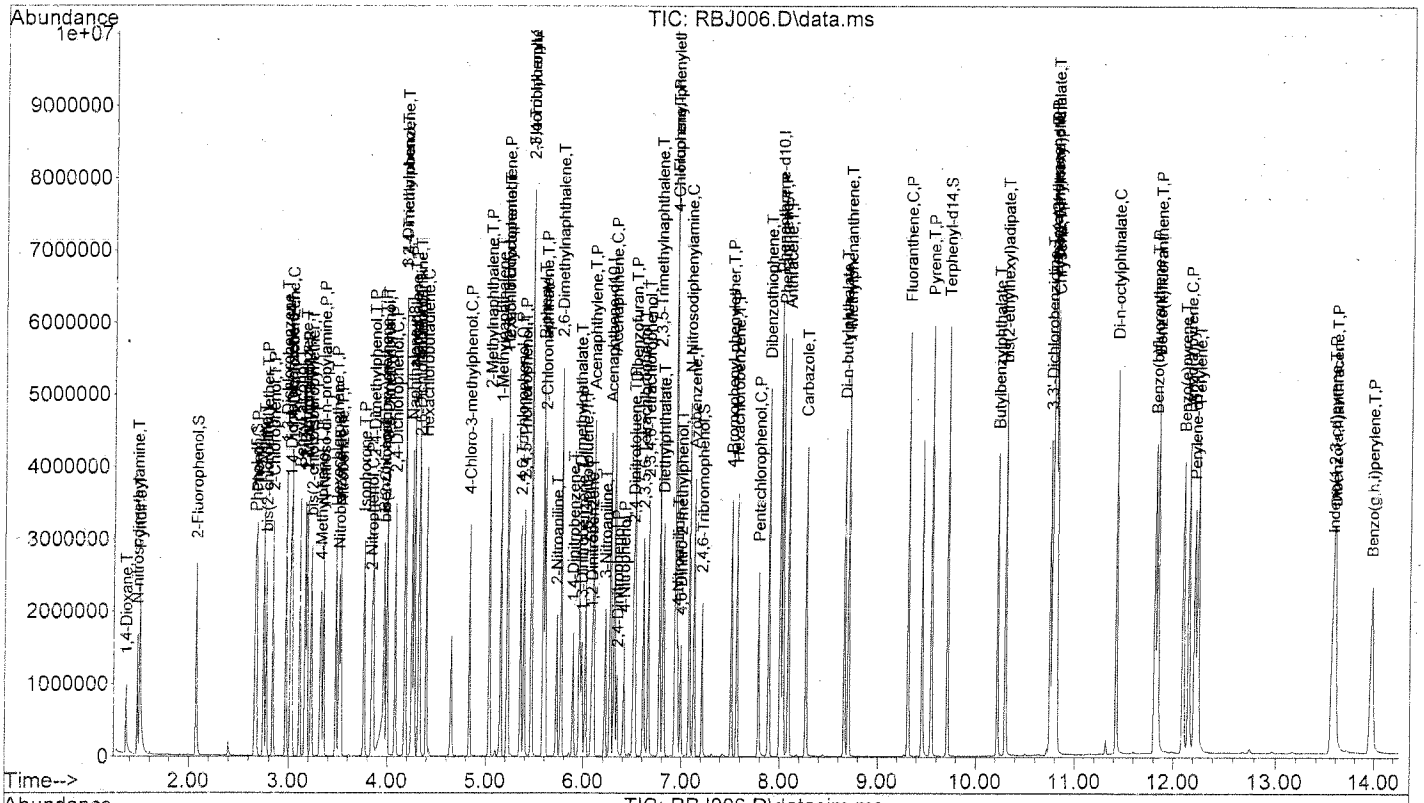
KV 02-08-16

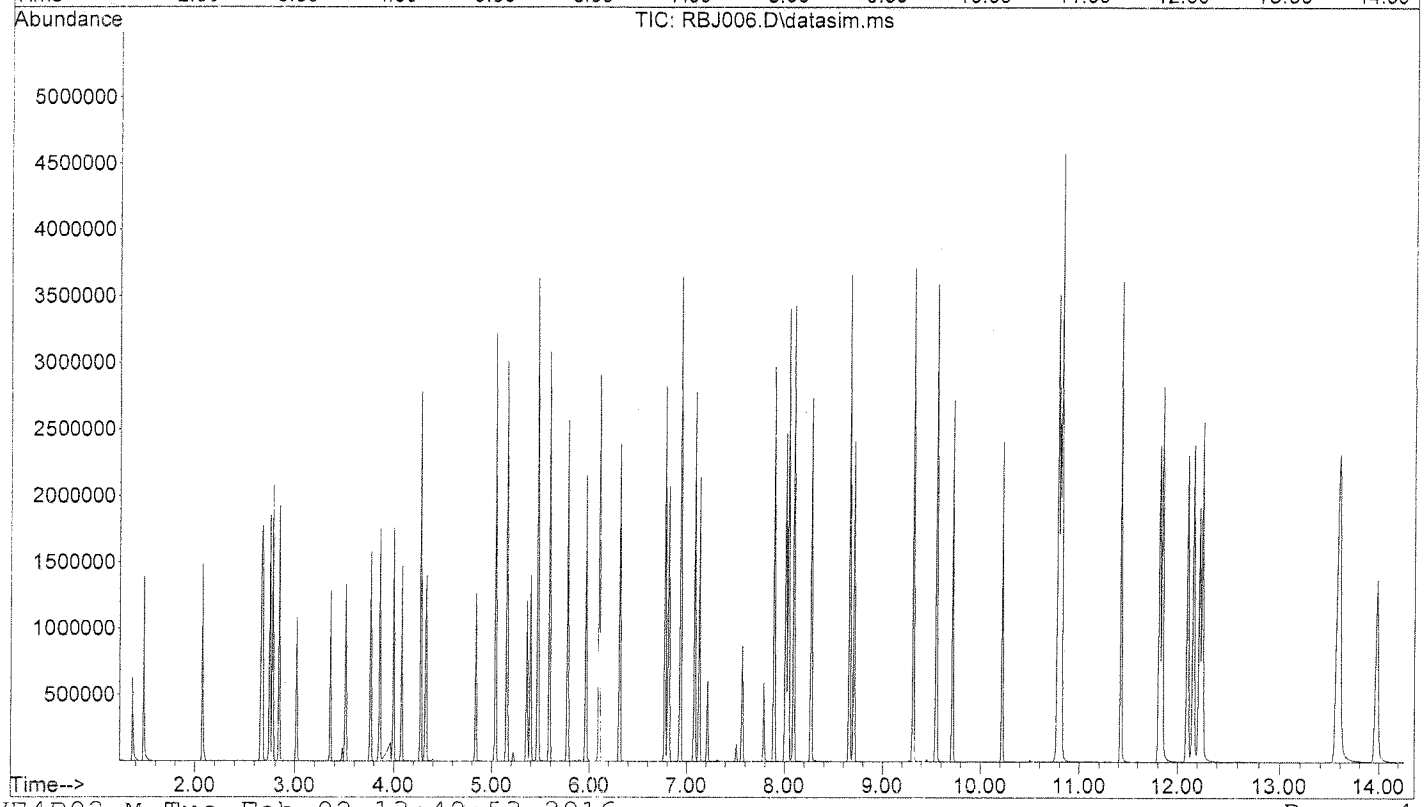
357

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ006.D
Acq On : 2 Feb 2016 10:06
Sample : SVE4B024
Misc : 40PPM
Integrator: RTE
Quant Time: Feb 02 13:48:44 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 6
Operator: KVu
Inst : E4
Multiplr: 1.00





02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	438355	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1557201	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	920177	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1669203	40.00	ppm	0.00
87) Chrysene-d12	10.791	240	1936700	40.00	ppm	0.00
97) Perylene-d12	12.218	264	1696912	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.075	112	718535	49.91	ppm	0.00
Spiked Amount 30.000			Recovery	=	166.37%	
6) Phenol-d5	2.665	99	886063	49.83	ppm	0.00
Spiked Amount 30.000			Recovery	=	166.10%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	3.514	82	877327	49.93	ppm	0.00
Spiked Amount 10.000			Recovery	=	499.30%	
46) 2-Fluorobiphenyl	5.471	172	1790042	48.69	ppm	0.00
Spiked Amount 10.000			Recovery	=	486.90%	
75) 2,4,6-Tribromophenol	7.214	330	210341	52.43	ppm	0.00
Spiked Amount 30.000			Recovery	=	174.77%	
90) Terphenyl-d14	9.716	244	2027883	48.91	ppm	0.00
Spiked Amount 10.000			Recovery	=	489.10%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	314172	47.86	ppm	97
3) N-nitrosodimethylamine	1.477	74	464848	49.89	ppm	99
4) Pyridine	1.500	79	862577	51.47	ppm	99
7) Phenol	2.675	94	904804	49.10	ppm	100
8) Aniline	2.748	93	1133572	48.34	ppm	100
9) bis(2-chloroethyl)ether	2.774	93	677686	48.52	ppm	99
10) 2-Chlorophenol	2.842	128	814683	52.39	ppm	91
11) 1,3-Dichlorobenzene	2.972	146	886416	48.89	ppm	100
13) 1,4-Dichlorobenzene	3.034	146	899802	48.87	ppm	99
14) Benzyl alcohol	3.116	108	492274	49.25	ppm	99
15) 1,2-Dichlorobenzene	3.169	146	851391	48.43	ppm	100
16) 2-Methylphenol	3.188	107	612392	48.69	ppm	98
17) bis(2-chloroisopropyl)...	3.231	45	1386911	47.67	ppm	99
18) 4-Methylphenol	3.322	107	814882	48.89	ppm	100
19) N-Nitroso-di-n-propyla...	3.360	70	605868	51.95	ppm	97
20) Hexachloroethane	3.480	117	349638	49.72	ppm	97
23) Nitrobenzene	3.533	77	865261	49.04	ppm	99
24) Isophorone	3.768	82	1634116	48.34	ppm	99
25) 2-Nitrophenol	3.845	139	357386	50.20	ppm	99
26) 2,4-Dimethylphenol	3.859	107	798601	48.84	ppm	98
27) Benzoic acid	3.974	105	514321	49.51	ppm	100
28) bis(2-Chloroethoxy)met...	3.969	93	852190	48.21	ppm	99
29) 3,5-Dimethylphenol	3.998	107	891313	50.54	ppm	98
30) 2,4-Dichlorophenol	4.080	162	690029	49.80	ppm	99
31) 3,4-Dimethylphenol	4.181	107	936836	48.66	ppm	100
32) 1,2,4-Trichlorobenzene	4.181	180	761823	48.15	ppm	99
33) Naphthalene	4.273	128	2104347	48.50	ppm	100
34) 4-Chloroaniline	4.321	127	896667	48.52	ppm	100
35) 2,6-Dichlorophenol	4.331	162	640786	48.88	ppm	100
36) Hexachlorobutadiene	4.398	225	529942	50.14	ppm	100

TM 02-08-16

309

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.842	107	663448	50.47	ppm		99
39)	2-Methylnaphthalene	5.043	142	1467243	48.06	ppm		100
40)	1-Methylnaphthalene	5.158	142	1279732	47.88	ppm		100
42)	Hexachlorocyclopentadiene	5.220	237	595649	51.56	ppm		100
43)	2,3,5-Trichlorophenol	5.225	196	525919	53.46	ppm		99
44)	2,4,6-Trichlorophenol	5.360	196	538847	51.49	ppm		99
45)	2,4,5-Trichlorophenol	5.394	196	564006	51.24	ppm		99
47)	2,3,4-Trichlorophenol	5.476	196	479411	49.70	ppm		100
48)	Biphenyl	5.591	154	1801506	48.07	ppm		100
49)	2-Chloronaphthalene	5.610	162	1633747	53.00	ppm		94
50)	2-Nitroaniline	5.730	65	445297	51.22	ppm		98
51)	2,6-Dimethylnaphthalene	5.773	156	1291814	48.67	ppm		100
52)	1,4-Dinitrobenzene	5.898	168	204754	53.66	ppm		100
53)	Dimethylphthalate	5.966	163	1660063	49.00	ppm		100
54)	1,3-Dinitrobenzene	5.990	168	235929	52.19	ppm		100
55)	2,6-Dinitrotoluene	6.029	165	352991	50.95	ppm		98
56)	1,2-Dinitrobenzene	6.091	168	149128	51.09	ppm	#	32
57)	Acenaphthylene	6.106	152	2505873	51.34	ppm		100
58)	3-Nitroaniline	6.226	138	367814	50.76	ppm		97
59)	Acenaphthene	6.317	153	1479879	48.45	ppm		99
60)	2,4-Dinitrophenol	6.346	184	164500	50.75	ppm		97
61)	4-Nitrophenol	6.418	109	261383	55.10	ppm		96
62)	2,4-Dinitrotoluene	6.514	165	469332	52.09	ppm		99
63)	Dibenzofuran	6.523	168	2104499	48.51	ppm		99
64)	2,3,5,6-Tetrachlorophenol	6.614	230	376682	52.41	ppm		100
65)	2,3,4,6-Tetrachlorophenol	6.667	232	510475	51.63	ppm		100
66)	2,3,5-Trimethylnaphtha...	6.781	170	1214381	48.90	ppm		100
67)	Diethylphthalate	6.818	149	1707916	49.75	ppm		100
68)	Fluorene	6.940	166	1642236	48.61	ppm		100
69)	4-Chlorophenyl-phenyle...	6.940	204	842803	48.97	ppm		99
70)	4-Nitroaniline	6.964	138	404059	54.21	ppm		100
72)	4,6-Dinitro-2-methylph...	6.997	198	273709	50.34	ppm		100
73)	N-Nitrosodiphenylamine	7.086	169	1398870	49.04	ppm		100
74)	Azobenzene	7.134	77	1638405	48.96	ppm		100
76)	4-Bromophenyl-phenylether	7.513	248	500611	49.95	ppm		98
77)	Hexachlorobenzene	7.570	284	507947	49.81	ppm		99
78)	Pentachlorophenol	7.792	266	316657	54.31	ppm		98
79)	Dibenzothiophene	7.896	184	2513390	48.81	ppm		96
80)	Phenanthrene	8.037	178	2554954	48.79	ppm		99
82)	Anthracene	8.098	178	2618283	49.64	ppm		100
83)	Carbazole	8.272	167	2221148	49.56	ppm		100
84)	Di-n-butylphthalate	8.664	149	2730384	50.25	ppm		100
85)	1-Methylphenanthrene	8.707	192	1854855	49.95	ppm		100
86)	Fluoranthene	9.316	202	2971362	50.35	ppm		99
89)	Pyrene	9.552	202	3257655	49.19	ppm		100
91)	Butylbenzylphthalate	10.222	149	1188907	52.95	ppm		99
92)	bis(2-ethylhexyl)adipate	10.299	129	954536	51.69	ppm		100
93)	3,3'-Dichlorobenzidine	10.752	252	1045654	52.41	ppm		99
94)	Benzo(a)anthracene	10.781	228	3009999	50.31	ppm		98
95)	Chrysene	10.820	228	2726827	49.30	ppm		100
96)	bis(2-Ethylhexyl)phtha...	10.801	149	1767206	50.98	ppm		100
98)	Di-n-octylphthalate	11.422	149	3048798	52.89	ppm		100
99)	Benzo(b)fluoranthene	11.816	252	2794385	51.35	ppm		99
100)	Benzo(k)fluoranthene	11.845	252	2659941	48.50	ppm		97
101)	Benzo(e)pyrene	12.101	252	2530641	50.39	ppm		98

KU 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.164	252	2626741	50.84 ppm	99
103) Perylene	12.256	252	2570491	49.57 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.573	276	2969853	51.91 ppm	100
105) Dibenzo(a,h)anthracene	13.602	278	2445773	51.31 ppm	97
106) Benzo(g,h,i)perylene	13.990	276	2490760	50.65 ppm	99

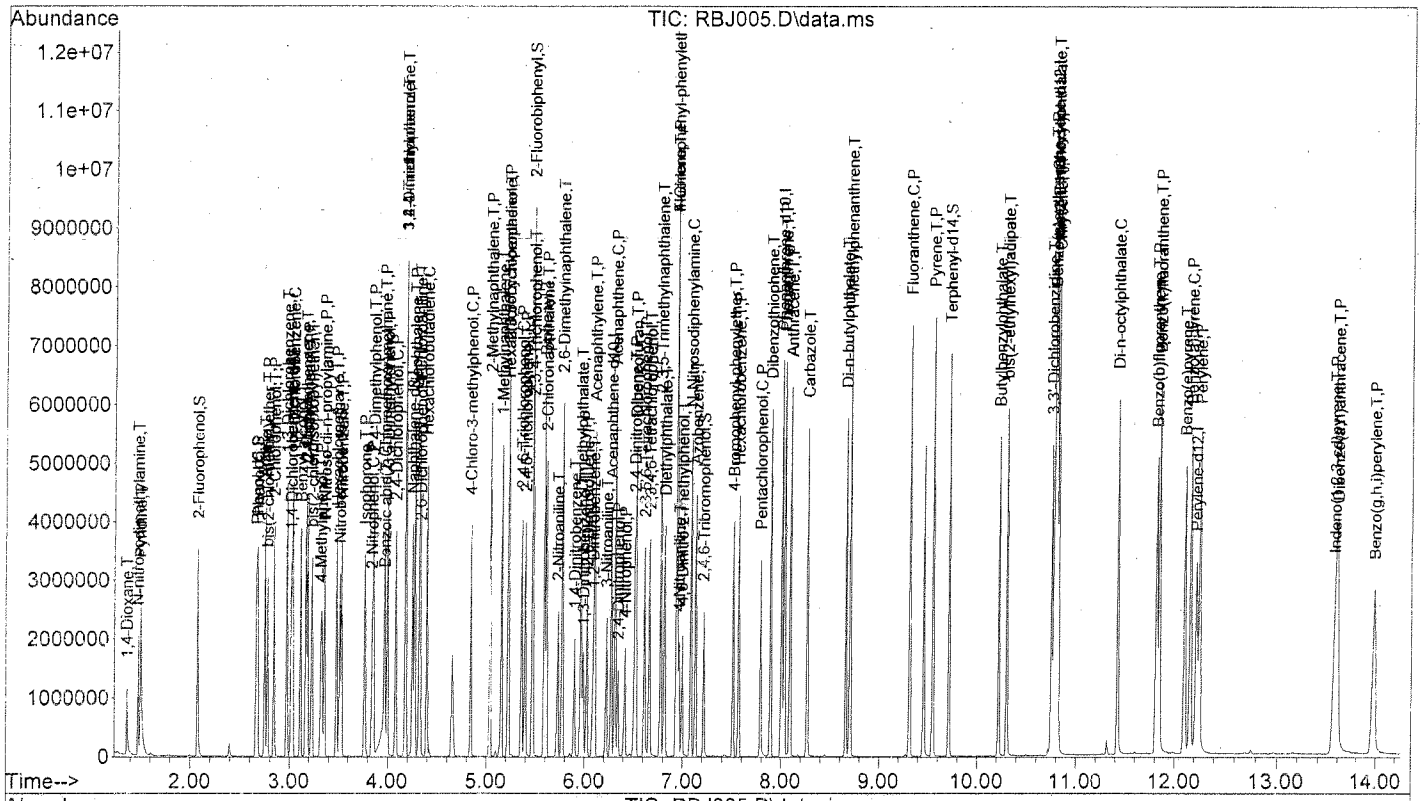
(#) = qualifier out of range (m) = manual integration (+) = signals summed

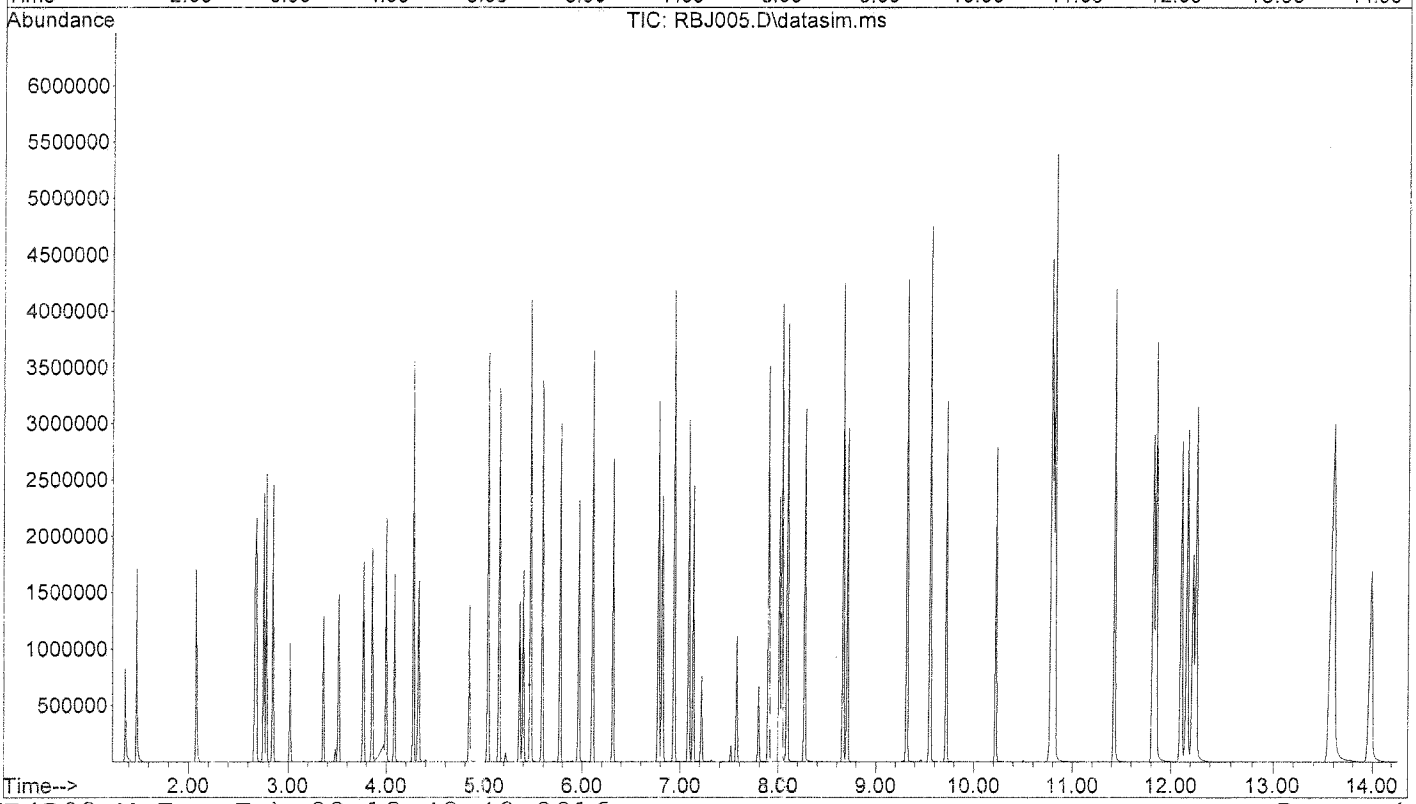
m 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ005.D
Acq On : 2 Feb 2016 9:47
Sample : SVE4B023
Misc : 50PPM
Integrator: RTE
Quant Time: Feb 02 13:47:48 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 5
Operator: KVu
Inst : E4
Multiplr: 1.00





JM 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ004.D
Acq On : 2 Feb 2016 9:28
Sample : SVE4B022
Misc : 80PPM
Integrator: RTE
Quant Time: Feb 02 13:47:31 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 4
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	457524	40.00	ppm	0.00
21) Naphthalene-d8	4.244	136	1635246	40.00	ppm	0.00
41) Acenaphthene-d10	6.269	164	965543	40.00	ppm	0.00
71) Phenanthrene-d10	8.004	188	1710410	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	1882885	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1627440	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 30.000			Recovery	=	0.00%	
6) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 30.000			Recovery	=	0.00%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
22) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
46) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
75) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 30.000			Recovery	=	0.00%	
90) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 10.000			Recovery	=	0.00%	
Target Compounds						Qvalue
4) Pyridine	1.500	79	1225737	70.07	ppm	100
27) Benzoic acid	3.988	105	910377	82.12	ppm	99

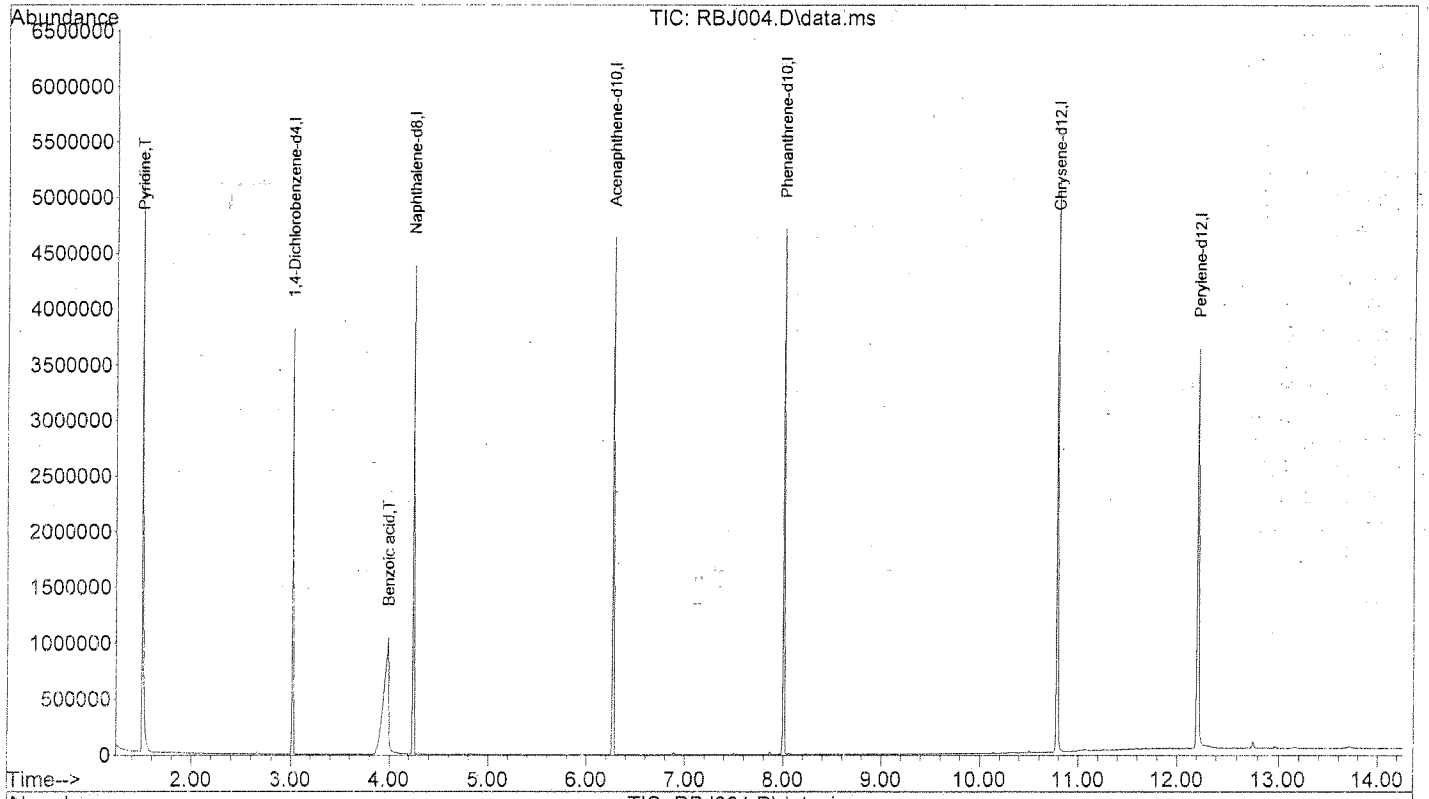
(#) = qualifier out of range (m) = manual integration (+) = signals summed

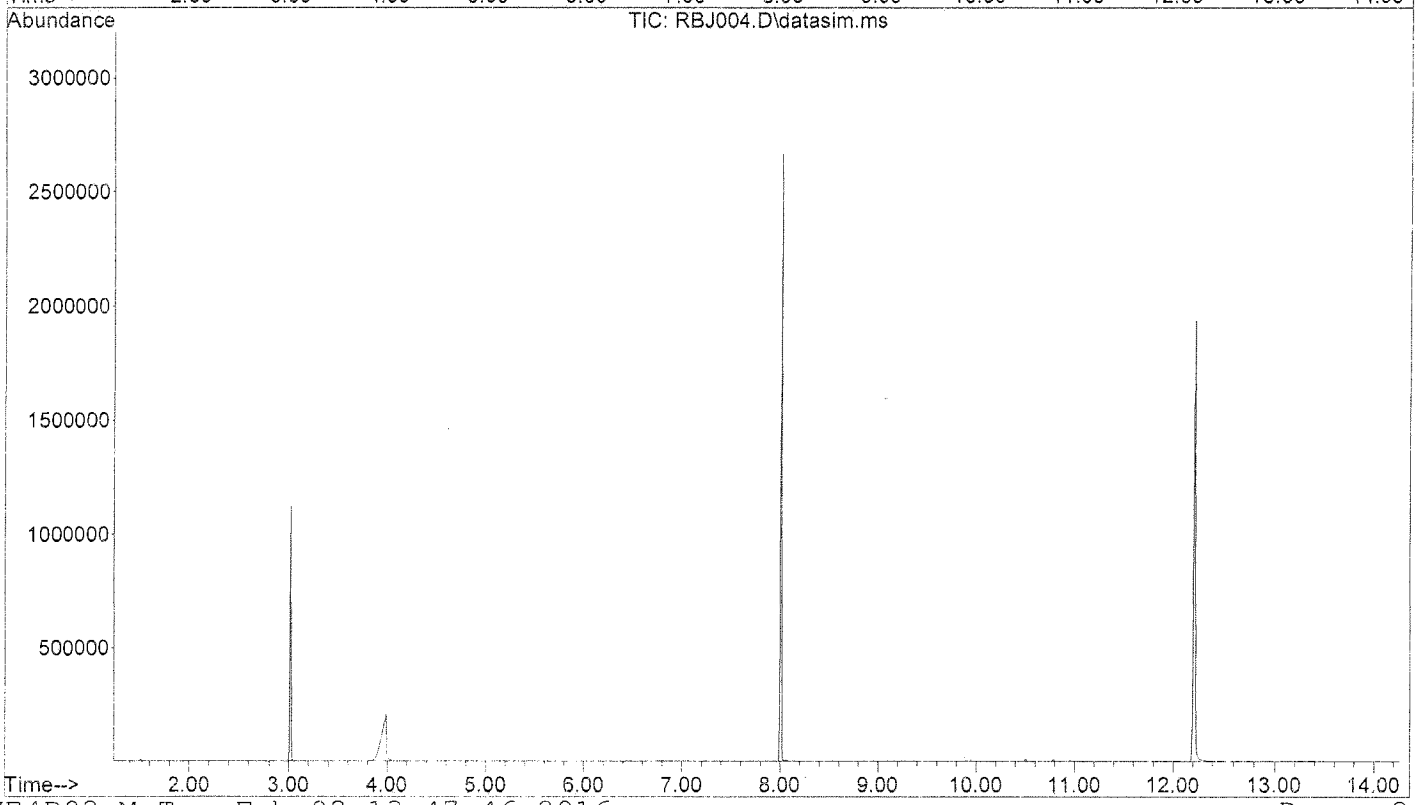
KVu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ004.D
Acq On : 2 Feb 2016 9:28
Sample : SVE4B022
Misc : 80PPM
Integrator: RTE
Quant Time: Feb 02 13:47:31 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 4
Operator: KVu
Inst : E4
Multiplr: 1.00





TM 02-08-16

364

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ003.D
Acq On : 2 Feb 2016 9:09
Sample : SVE4B021
Misc : 100PPM
Integrator: RTE
Quant Time: Feb 02 13:46:13 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.015	152	461215	40.00 ppm	0.00
21) Naphthalene-d8	4.244	136	1653283	40.00 ppm	0.00
41) Acenaphthene-d10	6.269	164	975500	40.00 ppm	0.00
71) Phenanthrene-d10	8.004	188	1717161	40.00 ppm	0.00
87) Chrysene-d12	10.786	240	1841322	40.00 ppm	0.00
97) Perylene-d12	12.213	264	1572144	40.00 ppm	0.00
System Monitoring Compounds					
5) 2-Fluorophenol	0.000	112	0	0.00 ppm	
Spiked Amount 30.000			Recovery	= 0.00%	
6) Phenol-d5	0.000	99	0	0.00 ppm	
Spiked Amount 30.000			Recovery	= 0.00%	
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
22) Nitrobenzene-d5	0.000	82	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
46) 2-Fluorobiphenyl	0.000	172	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
75) 2,4,6-Tribromophenol	0.000	330	0	0.00 ppm	
Spiked Amount 30.000			Recovery	= 0.00%	
90) Terphenyl-d14	0.000	244	0	0.00 ppm	
Spiked Amount 10.000			Recovery	= 0.00%	
Target Compounds					Qvalue
4) Pyridine	1.500	79	1530996	86.82 ppm	100
27) Benzoic acid	4.003	105	1116737	99.22 ppm	99

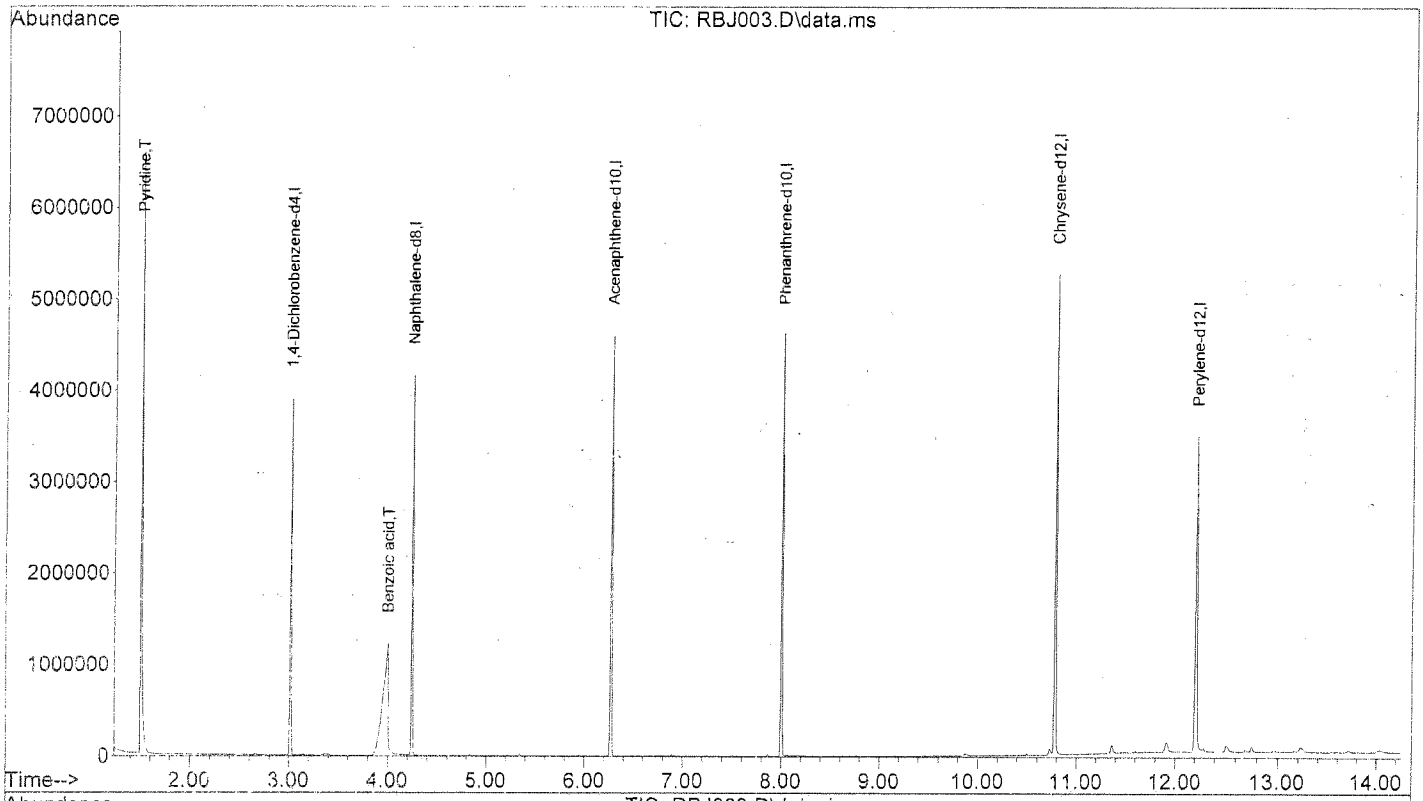
(#) = qualifier out of range (m) = manual integration (+) = signals summed

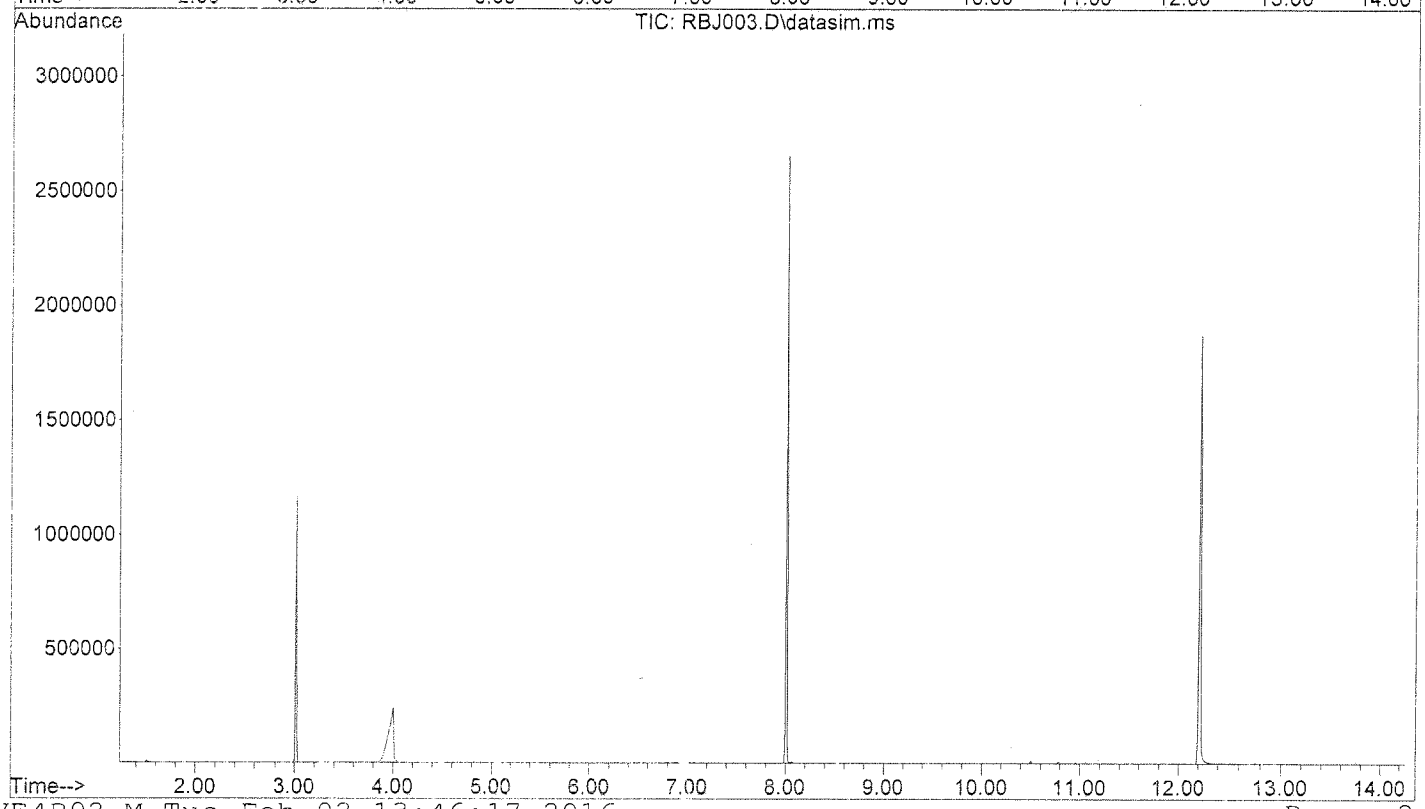
RW 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ003.D
Acq On : 2 Feb 2016 9:09
Sample : SVE4B021
Misc : 100PPM
Integrator: RTE
Quant Time: Feb 02 13:46:13 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00





M 02-08-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E4
IC Beginning DateTime :02/02/16 09:09
Spike Amount :25 PPM
CC/CV File :RBJ033
IC File :RBJ007

Column Spec :ZB-SEMI ID :0.18MM
IC Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02
Date_Time :02/02/16 18:46

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dichlorobenzene-d4	40.000	0	489141	1	1	3.015	3.015	0				
2	1,4-Dioxane	22.596	-9.6	165529	0.541	0.599	1.366	1.367	6.63				
3	N-nitrosodimethylamine	26.445	5.8	274941	0.899	0.850	1.477	1.477	1.57				
4	Pyridine	26.398	5.6	493685	1.615	1.529	1.510	1.502	7.97				
5	2-Fluorophenol	24.469	-2.1	393116	1.286	1.314	2.075	2.072	1.13				
6	Phenol-d5	23.855	-4.6	473365	1.548	1.623	2.664	2.659	1.86				
7	Phenol	24.760	-1.0	509189	1.666	1.682	2.675	2.671	1.81				
8	Aniline	24.691	-1.2	646048	2.113	2.140	2.743	2.744	2.23				
9	bis(2-chloroethyl)ether	24.841	-0.6	387198	1.267	1.275	2.774	2.772	2.19				
10	2-Chlorophenol	27.267	9.1	473123	1.548	1.419	2.842	2.838	3.81				
11	1,3-Dichlorobenzene	25.348	1.4	512821	1.677	1.654	2.972	2.972	1.34				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	25.192	0.8	517539	1.693	1.680	3.030	3.030	1.55				
14	Benzyl alcohol	27.443	9.8	306097	1.001	0.912	3.111	3.109	2.45				
15	1,2-Dichlorobenzene	24.965	-0.1	489716	1.602	1.604	3.164	3.165	2.20				
16	2-Methylphenol	24.960	-0.2	350318	1.146	1.148	3.188	3.184	1.93				
17	bis(2-chloroisopropyl)ether	26.044	4.2	845452	2.766	2.655	3.226	3.229	3.22				
18	4-Methylphenol	25.055	0.2	465958	1.524	1.521	3.327	3.321	4.06				
19	N-Nitroso-di-n-propylamine	23.620	-5.5	307409	1.006	1.064	3.351	3.351	5.54				
20	Hexachloroethane	25.382	1.5	199174	0.652	0.642	3.475	3.477	2.07				
21	Naphthalene-d8	40.000	0	1779787	1	1	4.249	4.247	0				
22	Nitrobenzene-d5	7.760	-6.9	155855	0.420	0.451	3.509	3.508	1.58				
23	Nitrobenzene	24.472	-2.1	493471	0.444	0.453	3.528	3.528	1.42				
24	Isophorone	25.043	0.2	967528	0.870	0.868	3.758	3.758	1.97				
25	2-Nitrophenol	25.474	1.9	207281	0.186	0.183	3.840	3.839	7.64				
26	2,4-Dimethylphenol	24.571	-1.7	459153	0.413	0.420	3.854	3.854	1.54				
27	Benzoic acid	22.627	-9.5	255565	0.230	0.243	3.941	3.946	15.58	-0.0135	0.2778		0.9993
28	bis(2-Chloroethoxy)methane	25.630	2.5	517829	0.466	0.454	3.964	3.965	2.26				
29	3,5-Dimethylphenol	25.458	1.8	513128	0.461	0.453	3.993	3.993	7.12				
30	2,4-Dichlorophenol	24.247	-3.0	383974	0.345	0.356	4.080	4.077	2.03				
31	3,4-Dimethylphenol	25.620	2.5	563717	0.507	0.495	4.176	4.172	1.72				
32	1,2,4-Trichlorobenzene	25.352	1.4	458482	0.412	0.406	4.181	4.179	2.33				
33	Naphthalene	24.826	-0.7	1231112	1.107	1.115	4.273	4.270	2.29				
34	4-Chloroaniline	24.264	-2.9	512483	0.461	0.475	4.316	4.315	1.94				
35	2,6-Dichlorophenol	25.411	1.6	380739	0.342	0.337	4.326	4.324	1.66				
36	Hexachlorobutadiene	25.421	1.7	307063	0.276	0.271	4.398	4.395	1.22				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	24.974	-0.1	375198	0.337	0.338	4.837	4.836	3.57				
39	2-Methylnaphthalene	24.288	-2.8	847484	0.762	0.784	5.038	5.039	2.67				
40	1-Methylnaphthalene	25.838	3.4	789365	0.710	0.687	5.153	5.153	2.73				
41	Acenaphthene-d10	40.000	0	1073834	1	1	6.274	6.272	0				
42	Hexachlorocyclopentadiene	20.676	-17.3	278733	0.415	0.502	5.220	5.218	4.45				
43	2,3,5-Trichlorophenol	27.570	10.3	316541	0.472	0.428	5.225	5.223	9.04				
44	2,4,6-Trichlorophenol	25.565	2.3	312201	0.465	0.455	5.355	5.356	4.02				
45	2,4,5-Trichlorophenol	25.260	1.0	324477	0.483	0.478	5.394	5.391	3.93				
46	2-Fluorobiphenyl	7.647	-8.2	328057	1.467	1.598	5.466	5.466	2.17				
47	2,3,4-Trichlorophenol	25.644	2.6	288666	0.430	0.419	5.471	5.469	1.40				
48	Biphenyl	24.704	-1.2	1080316	1.610	1.629	5.586	5.585	2.80				
49	2-Chloronaphthalene	24.696	-1.2	888400	1.324	1.340	5.606	5.606	3.36				
50	2-Nitroaniline	26.040	4.2	264162	0.394	0.378	5.725	5.721	6.20				
51	2,6-Dimethylnaphthalene	25.700	2.8	796029	1.186	1.154	5.773	5.771	1.76				
52	1,4-Dinitrobenzene	25.502	2.0	113568	0.169	0.166	5.894	5.890	10.58				
53	Dimethylphthalate	26.053	4.2	1030100	1.535	1.473	5.956	5.955	1.25				
54	1,3-Dinitrobenzene	25.843	3.4	136331	0.203	0.197	5.981	5.979	9.11				
55	2,6-Dinitrotoluene	25.310	1.2	204654	0.305	0.301	6.019	6.019	3.30				
56	1,2-Dinitrobenzene	24.911	-0.4	84858	0.126	0.127	6.082	6.079	6.06				
57	Acenaphthylene	24.325	-2.7	1385515	2.064	2.122	6.101	6.101	4.18				
58	3-Nitroaniline	25.467	1.9	215352	0.321	0.315	6.216	6.216	3.68				
59	Acenaphthene	24.757	-1.0	882531	1.315	1.328	6.312	6.312	1.93				
60	2,4-Dinitrophenol	20.741	-17.0	72069	0.107	0.116	6.341	6.339	26.38	-0.0101	0.1488		0.9982
61	4-Nitrophenol	24.859	-0.6	137625	0.205	0.206	6.408	6.406	10.34				
62	2,4-Dinitrotoluene	24.327	-2.7	255773	0.381	0.392	6.504	6.503	7.16				
63	Dibenzofuran	24.476	-2.1	1239160	1.846	1.886	6.518	6.519	1.94				
64	2,3,5,6-Tetrachlorophenol	24.251	-3.0	203399	0.303	0.312	6.609	6.609	7.84				
65	2,3,4,6-Tetrachlorophenol	25.478	1.9	293976	0.438	0.430	6.662	6.661	4.25				
66	2,3,5-Trimethylnaphthalene	25.699	2.8	744817	1.110	1.080	6.776	6.774	1.25				
67	Diethylphthalate	26.275	5.1	1052601	1.568	1.492	6.814	6.811	1.03				
68	Fluorene	24.822	-0.7	978678	1.458	1.469	6.936	6.933	1.82				
69	4-Chlorophenyl-phenylether	24.457	-2.2	491256	0.732	0.748	6.940	6.939	1.34				
70	4-Nitroaniline	24.202	-3.2	210521	0.314	0.324	6.954	6.951	8.12				
71	Phenanthrene-d10	40.000	0	1895693	1	1	8.009	8.008	0				
72	4,6-Dinitro-2-methylphenol	22.982	-8.1	134236	0.113	0.112	6.992	6.988	21.93	-0.0075	0.1362		0.9998
73	N-Nitrosodiphenylamine	23.192	-7.2	751234	0.634	0.683	7.077	7.078	1.47				
74	Azobenzene	26.138	4.6	993325	0.838	0.802	7.129	7.128	1.51				
75	2,4,6-Tribromophenol	23.465	-6.1	106904	0.090	0.096	7.214	7.211	7.59				
76	4-Bromophenyl-phenylether	25.078	0.3	285435	0.241	0.240	7.509	7.508	2.11				
77	Hexachlorobenzene	25.072	0.3	290392	0.245	0.244	7.565	7.566	1.23				
78	Pentachlorophenol	26.123	4.5	172981	0.146	0.140	7.792	7.789	12.24				
79	Dibenzothiophene	25.813	3.3	1509521	1.274	1.234	7.891	7.891	2.20				
80	Phenanthrene	25.056	0.2	1490080	1.258	1.255	8.037	8.034	1.91				
81	Dinoseb												
82	Anthracene	24.300	-2.8	1455584	1.229	1.264	8.089	8.090	0.90				
83	Carbazole	25.060	0.2	1275569	1.077	1.074	8.267	8.267	1.46				
84	Di-n-butylphthalate	26.899	7.6	1660019	1.401	1.302	8.659	8.660	3.60				
85	1-Methylphenanthrene	25.075	0.3	1057563	0.893	0.890	8.702	8.702	1.11				
86	Fluoranthene	24.447	-2.2	1638390	1.383	1.414	9.311	9.311	1.15				
87	Chrysene-d12	40.000	0	2074726	1	1	10.786	10.788	0				
88	Benzidine												
89	Pyrene	25.759	3.0	1827352	1.409	1.368	9.547	9.547	3.42				
90	Terphenyl-d14	7.582	-9.0	336765	0.780	0.856	9.707	9.713	1.41				
91	Butylbenzylphthalate	28.554	14.2	686803	0.530	0.464	10.218	10.219	11.98				
92	bis(2-ethylhexyl)adipate	26.227	4.9	518849	0.400	0.381	10.295	10.298	10.19				
93	3,3'-Dichlorobenzidine	23.966	-4.1	512206	0.395	0.412	10.748	10.748	6.19				
94	Benzo(a)anthracene	24.744	-1.0	1586069	1.223	1.236	10.777	10.777	1.31				
95	Chrysene	25.777	3.1	1527372	1.178	1.142	10.811	10.814	1.42				
96	bis(2-Ethylhexyl)phthalate	26.820	7.3	996004	0.768	0.716	10.796	10.799	6.46				
97	Perylene-d12	40.000	0	1806442	1	1	12.213	12.215	0				
98	Di-n-octylphthalate	28.056	12.2	1721627	1.525	1.359	11.417	11.420	11.88				
99	Benzo(b)fluoranthene	25.330	1.3	1467439	1.300	1.283	11.806	11.809	3.32				
100	Benzo(k)fluoranthene	24.587	-1.7	1435344	1.271	1.293	11.835	11.837	2.85				
101	Benzo(e)pyrene	24.928	-0.3	1332727	1.180	1.184	12.091	12.094	1.87				
102	Benzo(a)pyrene	24.547	-1.8	1350115	1.196	1.218	12.150	12.152	2.59				
103	Perylene	24.626	-1.5	1359345	1.204	1.222	12.242	12.245	1.55				
104	Indeno(1,2,3-cd)pyrene	25.485	1.9	1552263	1.375	1.349	13.553	13.560	5.04				
105	Dibenzo(a,h)anthracene	24.749	-1.0	1255853	1.112	1.124	13.578	13.584	4.34				
106	Benzo(g,h,i)perylene	25.986	3.9	1360492	1.205	1.159	13.966	13.966	2.24				

m 02-08-16

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	115	0.00
2	T	1,4-Dioxane	25.000	22.596	9.6	107	0.00
3	T	N-nitrosodimethylamine	25.000	26.445	-5.8	119	0.00
4	T	Pyridine	25.000	26.398	-5.6	114	0.00
5	S	2-Fluorophenol	25.000	24.469	2.1	111	0.00
6	S	Phenol-d5	25.000	23.855	4.6	106	0.00
7	C,P	Phenol	25.000	24.760	1.0	112	0.00
8	T	Aniline	25.000	24.691	1.2	111	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	24.841	0.6	111	0.00
10	T,P	2-Chlorophenol	25.000	27.266	-9.1	126	0.00
11	T	1,3-Dichlorobenzene	25.000	25.348	-1.4	115	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	0.00
13	C	1,4-Dichlorobenzene	25.000	25.193	-0.8	115	0.00
14	T	Benzyl alcohol	25.000	27.443	-9.8	124	0.00
15	T	1,2-Dichlorobenzene	25.000	24.965	0.1	113	0.00
16	T,P	2-Methylphenol	25.000	24.960	0.2	113	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	26.044	-4.2	119	0.00
18	T,P	4-Methylphenol	25.000	25.055	-0.2	114	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	23.620	5.5	109	0.00
20	T,P	Hexachloroethane	25.000	25.382	-1.5	114	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	116	0.00
22	S	Nitrobenzene-d5 8.333	25.000	7.760	6.9 ~~69.0#~~	~~35~~ 105	0.00
23	T,P	Nitrobenzene	25.000	24.472	2.1	111	0.00
24	T,P	Isophorone	25.000	25.043	-0.2	114	0.00
25	C,P	2-Nitrophenol	25.000	25.474	-1.9	110	0.00
26	T,P	2,4-Dimethylphenol	25.000	24.571	1.7	111	0.00
27	T	Benzoic acid	25.000	22.627	9.5	105	0.00
28	T,P	bis(2-Chloroethoxy)methane	25.000	25.630	-2.5	117	0.00
29	T	3,5-Dimethylphenol	25.000	25.459	-1.8	111	0.00
30	C,P	2,4-Dichlorophenol	25.000	24.247	3.0	110	0.00
31	T	3,4-Dimethylphenol	25.000	25.620	-2.5	116	0.00
32	T	1,2,4-Trichlorobenzene	25.000	25.352	-1.4	117	0.00
33	T,P	Naphthalene	25.000	24.826	0.7	114	0.00
34	T	4-Chloroaniline	25.000	24.264	2.9	110	0.00
35	T	2,6-Dichlorophenol	25.000	25.411	-1.6	115	0.00
36	C	Hexachlorobutadiene	25.000	25.421	-1.7	116	0.00
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	24.974	0.1	113	0.00
39	T,P	2-Methylnaphthalene	25.000	24.288	2.8	111	0.00
40	T	1-Methylnaphthalene	25.000	25.838	-3.4	118	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	115	0.00
42	P	Hexachlorocyclopentadiene	25.000	20.676	17.3	94	0.00
43	T	2,3,5-Trichlorophenol	25.000	27.570	-10.3	122	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	25.565	-2.3	116	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	25.260	-1.0	113	0.00
46	S	2-Fluorobiphenyl 8.333	~~25.000~~	7.647	8.2 ~~69.4#~~	~~35~~ 105	0.00
47	T	2,3,4-Trichlorophenol	25.000	25.644	-2.6	118	0.00
48	T	Biphenyl	25.000	24.704	1.2	114	0.00
49	T,P	2-Chloronaphthalene	25.000	24.696	1.2	116	0.00

KV 2/3/16

02-08-16

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Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	26.040	-4.2	115	0.00
51	T	2,6-Dimethylnaphthalene	25.000	25.700	-2.8	117	0.00
52	T	1,4-Dinitrobenzene	25.000	25.502	-2.0	110	0.00
53	T	Dimethylphthalate	25.000	26.053	-4.2	120	0.00
54	T	1,3-Dinitrobenzene	25.000	25.843	-3.4	112	0.00
55	T,P	2,6-Dinitrotoluene	25.000	25.311	-1.2	114	0.00
56	T	1,2-Dinitrobenzene	25.000	24.911	0.4	109	0.00
57	T,P	Acenaphthylene	25.000	24.325	2.7	105	0.00
58	T	3-Nitroaniline	25.000	25.467	-1.9	115	0.00
59	C,P	Acenaphthene	25.000	24.757	1.0	114	0.00
60	P	2,4-Dinitrophenol	25.000	20.741	17.0	94	0.00
61	P	4-Nitrophenol	25.000	24.859	0.6	110	0.00
62	T,P	2,4-Dinitrotoluene	25.000	24.327	2.7	107	0.00
63	T,P	Dibenzofuran	25.000	24.476	2.1	113	0.00
64	T	2,3,5,6-Tetrachlorophenol	25.000	24.251	3.0	107	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	25.478	-1.9	115	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	25.699	-2.8	118	0.00
67	T	Diethylphthalate	25.000	26.275	-5.1	119	0.00
68	T,P	Fluorene	25.000	24.822	0.7	114	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	24.457	2.2	113	0.00
70	T	4-Nitroaniline	25.000	24.202	3.2	104	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	112	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	22.982	8.1	101	0.00
73	C	N-Nitrosodiphenylamine	25.000	23.192	7.2	103	0.00
74	T	Azobenzene	25.000	26.138	-4.6	117	0.00
75	S	2,4,6-Tribromophenol	25.000	23.465	6.1	101	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	25.078	-0.3	113	0.00
77	T,P	Hexachlorobenzene	25.000	25.072	-0.3	113	0.00
78	C,P	Pentachlorophenol	25.000	26.123	-4.5	110	0.00
79	T	Dibenzothiophene	25.000	25.813	-3.3	116	0.00
80	T,P	Phenanthrene	25.000	25.056	-0.2	112	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	24.300	2.8	107	0.00
83	T	Carbazole	25.000	25.060	-0.2	112	0.00
84	T	Di-n-butylphthalate	25.000	26.899	-7.6	116	0.00
85	T	1-Methylphenanthrene	25.000	25.075	-0.3	111	0.00
86	C,P	Fluoranthene	25.000	24.447	2.2	109	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	112	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	25.759	-3.0	109	0.00
90	S	Terphenyl-d14	~~25.000~~ 8.333	7.582	~~69.7#~~ 9.0	~~34~~ 162	0.00
91	T	Butylbenzylphthalate	25.000	28.554	-14.2	119	0.00
92	T	bis(2-ethylhexyl)adipate	25.000	26.227	-4.9	110	0.00
93	T	3,3'-Dichlorobenzidine	25.000	23.966	4.1	104	0.00
94	T,P	Benzo(a)anthracene	25.000	24.745	1.0	110	0.00
95	T,P	Chrysene	25.000	25.777	-3.1	115	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	26.820	-7.3	115	0.00
97	I	Perylene-d12	40.000	40.000	0.0	113	0.00

KV 2/3/16

gm 02-08-16

578

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	28.056	-12.2	119	0.00
99	T,P	Benzo(b)fluoranthene	25.000	25.330	-1.3	109	0.00
100	T,P	Benzo(k)fluoranthene	25.000	24.587	1.7	113	0.00
101	T	Benzo(e)pyrene	25.000	24.928	0.3	110	0.00
102	C,P	Benzo(a)pyrene	25.000	24.547	1.8	109	0.00
103	T	Perylene	25.000	24.626	1.5	110	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	25.485	-1.9	112	0.00
105	T,P	Dibenzo(a,h)anthracene	25.000	24.749	1.0	108	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	25.986	-3.9	116	0.00

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

pu 02-08-16

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	115	0.00	
2	T	1,4-Dioxane	0.599	0.541	9.7	107	0.00	
3	T	N-nitrosodimethylamine	0.850	0.899	-5.8	119	0.00	
4	T	Pyridine	1.529	1.615	-5.6	114	0.00	
5	S	2-Fluorophenol	1.314	1.286	2.1	111	0.00	
6	S	Phenol-d5	1.623	1.548	4.6	106	0.00	
7	C,P	Phenol	1.682	1.666	1.0	112	0.00	
8	T	Aniline	2.140	2.113	1.3	111	0.00	
9	T,P	bis(2-chloroethyl)ether	1.275	1.267	0.6	111	0.00	
10	T,P	2-Chlorophenol	1.419	1.548	-9.1	126	0.00	
11	T	1,3-Dichlorobenzene	1.654	1.677	-1.4	115	0.00	
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	0.00	
13	C	1,4-Dichlorobenzene	1.680	1.693	-0.8	115	0.00	
14	T	Benzyl alcohol	0.912	1.001	-9.8	124	0.00	
15	T	1,2-Dichlorobenzene	1.604	1.602	0.1	113	0.00	
16	T,P	2-Methylphenol	1.148	1.146	0.2	113	0.00	
17	T	bis(2-chloroisopropyl)ether	2.655	2.766	-4.2	119	0.00	
18	T,P	4-Methylphenol	1.521	1.524	-0.2	114	0.00	
19	P,P	N-Nitroso-di-n-propylamine	1.064	1.006	5.5	109	0.00	
20	T,P	Hexachloroethane	0.642	0.652	-1.6	114	0.00	
21	I	Naphthalene-d8	1.000	1.000	0.0 6.9	116 105	0.00	
22	S	Nitrobenzene-d5	0.451	~~0.140~~ 0.42	~~69~~.0#	~~35~~#	0.00	
23	T,P	Nitrobenzene	0.453	0.444	2.0	111	0.00	
24	T,P	Isophorone	0.868	0.870	-0.2	114	0.00	
25	C,P	2-Nitrophenol	0.183	0.186	-1.6	110	0.00	
26	T,P	2,4-Dimethylphenol	0.420	0.413	1.7	111	0.00	
27	T	Benzoic acid	0.243	0.230	5.3	105	0.00	
28	T,P	bis(2-Chloroethoxy)methane	0.454	0.466	-2.6	117	0.00	
29	T	3,5-Dimethylphenol	0.453	0.461	-1.8	111	0.00	
30	C,P	2,4-Dichlorophenol	0.356	0.345	3.1	110	0.00	
31	T	3,4-Dimethylphenol	0.495	0.507	-2.4	116	0.00	
32	T	1,2,4-Trichlorobenzene	0.406	0.412	-1.5	117	0.00	
33	T,P	Naphthalene	1.115	1.107	0.7	114	0.00	
34	T	4-Chloroaniline	0.475	0.461	2.9	110	0.00	
35	T	2,6-Dichlorophenol	0.337	0.342	-1.5	115	0.00	
36	C	Hexachlorobutadiene	0.271	0.276	-1.8	116	0.00	KV
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00	
38	C,P	4-Chloro-3-methylphenol	0.338	0.337	0.3	113	0.00	2/3/16
39	T,P	2-Methylnaphthalene	0.784	0.762	2.8	111	0.00	
40	T	1-Methylnaphthalene	0.687	0.710	-3.3	118	0.00	
41	I	Acenaphthene-d10	1.000	1.000	0.0	115	0.00	
42	P	Hexachlorocyclopentadiene	0.502	0.415	17.3	94	0.00	
43	T	2,3,5-Trichlorophenol	0.428	0.472	-10.3	122	0.00	
44	C,P	2,4,6-Trichlorophenol	0.455	0.465	-2.2 8.7	116 105	0.00	
45	T,P	2,4,5-Trichlorophenol	0.478	0.483	-1.0	113	0.00	
46	S	2-Fluorobiphenyl	1.598	~~0.489~~ 1.467	~~69~~.4#	~~35~~#	0.00	
47	T	2,3,4-Trichlorophenol	0.419	0.430	-2.6	118	0.00	
48	T	Biphenyl	1.629	1.610	1.2	114	0.00	TM 02-08-16
49	T,P	2-Chloronaphthalene	1.340	1.324	1.2	116	0.00	

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Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.378	0.394	-4.2	115	0.00
51	T	2,6-Dimethylnaphthalene	1.154	1.186	-2.8	117	0.00
52	T	1,4-Dinitrobenzene	0.166	0.169	-1.8	110	0.00
53	T	Dimethylphthalate	1.473	1.535	-4.2	120	0.00
54	T	1,3-Dinitrobenzene	0.197	0.203	-3.0	112	0.00
55	T,P	2,6-Dinitrotoluene	0.301	0.305	-1.3	114	0.00
56	T	1,2-Dinitrobenzene	0.127	0.126	0.8	109	0.00
57	T,P	Acenaphthylene	2.122	2.064	2.7	105	0.00
58	T	3-Nitroaniline	0.315	0.321	-1.9	115	0.00
59	C,P	Acenaphthene	1.328	1.315	1.0	114	0.00
60	P	2,4-Dinitrophenol	0.116	0.107	7.8	94	0.00
61	P	4-Nitrophenol	0.206	0.205	0.5	110	0.00
62	T,P	2,4-Dinitrotoluene	0.392	0.381	2.8	107	0.00
63	T,P	Dibenzofuran	1.886	1.846	2.1	113	0.00
64	T	2,3,5,6-Tetrachlorophenol	0.312	0.303	2.9	107	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.430	0.438	-1.9	115	0.00
66	T	2,3,5-Trimethylnaphthalene	1.080	1.110	-2.8	118	0.00
67	T	Diethylphthalate	1.492	1.568	-5.1	119	0.00
68	T,P	Fluorene	1.469	1.458	0.7	114	0.00
69	T,P	4-Chlorophenyl-phenylether	0.748	0.732	2.1	113	0.00
70	T	4-Nitroaniline	0.324	0.314	3.1	104	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	112	0.00
72	T	4,6-Dinitro-2-methylphenol	0.112	0.113	-0.9	101	0.00
73	C	N-Nitrosodiphenylamine	0.683	0.634	7.2	103	0.00
74	T	Azobenzene	0.802	0.838	-4.5	117	0.00
75	S	2,4,6-Tribromophenol	0.096	0.090	6.3	101	0.00
76	T,P	4-Bromophenyl-phenylether	0.240	0.241	-0.4	113	0.00
77	T,P	Hexachlorobenzene	0.244	0.245	-0.4	113	0.00
78	C,P	Pentachlorophenol	0.140	0.146	-4.3	110	0.00
79	T	Dibenzothiophene	1.234	1.274	-3.2	116	0.00
80	T,P	Phenanthrene	1.255	1.258	-0.2	112	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.264	1.229	2.8	107	0.00
83	T	Carbazole	1.074	1.077	-0.3	112	0.00
84	T	Di-n-butylphthalate	1.302	1.401	-7.6	116	0.00
85	T	1-Methylphenanthrene	0.890	0.893	-0.3	111	0.00
86	C,P	Fluoranthene	1.414	1.383	2.2	109	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	112	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.368	1.409	-3.0 8.4	109 102	0.00 KV
90	S	Terphenyl-d14	0.856	~~0.260~~ .78	~~69~~.6#	~~34~~#	0.00
91	T	Butylbenzylphthalate	0.464	0.530	-14.2	119	0.00 2/3/16
92	T	bis(2-ethylhexyl)adipate	0.381	0.400	-5.0	110	0.00
93	T	3,3'-Dichlorobenzidine	0.412	0.395	4.1	104	0.00
94	T,P	Benzo(a)anthracene	1.236	1.223	1.1	110	0.00
95	T,P	Chrysene	1.142	1.178	-3.2	115	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.716	0.768	-7.3	115	0.00
97	I	Perylene-d12	1.000	1.000	0.0	113	0.00

KV 02-08-16

373

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.359	1.525	-12.2	119	0.00
99	T,P	Benzo(b)fluoranthene	1.283	1.300	-1.3	109	0.00
100	T,P	Benzo(k)fluoranthene	1.293	1.271	1.7	113	0.00
101	T	Benzo(e)pyrene	1.184	1.180	0.3	110	0.00
102	C,P	Benzo(a)pyrene	1.218	1.196	1.8	109	0.00
103	T	Perylene	1.222	1.204	1.5	110	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.349	1.375	-1.9	112	0.00
105	T,P	Dibenzo(a,h)anthracene	1.124	1.112	1.1	108	0.00
106	T,P	Benzo(g,h,i)perylene	1.159	1.205	-4.0	116	0.00

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

KVu 02-08-16

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.015	152	489141	40.00	ppm	0.00
21) Naphthalene-d8	4.249	136	1779787	40.00	ppm	0.00
41) Acenaphthene-d10	6.274	164	1073834	40.00	ppm	0.00
71) Phenanthrene-d10	8.009	188	1895693	40.00	ppm	0.00
87) Chrysene-d12	10.786	240	2074726	40.00	ppm	0.00
97) Perylene-d12	12.213	264	1806442	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	2.075	112	393116	24.47	ppm	0.00
Spiked Amount 30.000			Recovery = 81.57%			
6) Phenol-d5	2.665	99	473365	23.86	ppm	0.00
Spiked Amount 30.000			Recovery = 79.53%			
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
22) Nitrobenzene-d5	3.509	82	155855	7.76	ppm	0.00
Spiked Amount 10.000			Recovery = 77.60%			
46) 2-Fluorobiphenyl	5.466	172	328057	7.65	ppm	0.00
Spiked Amount 10.000			Recovery = 76.50%			
75) 2,4,6-Tribromophenol	7.214	330	106904	23.47	ppm	0.00
Spiked Amount 30.000			Recovery = 78.23%			
90) Terphenyl-d14	9.707	244	336765	7.58	ppm	0.00
Spiked Amount 10.000			Recovery = 75.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	1.366	88	165529	22.60	ppm	97
3) N-nitrosodimethylamine	1.477	74	274941	26.45	ppm	99
4) Pyridine	1.510	79	493685	26.40	ppm	99
7) Phenol	2.675	94	509189	24.76	ppm	99
8) Aniline	2.743	93	646048	24.69	ppm	99
9) bis(2-chloroethyl)ether	2.774	93	387198	24.84	ppm	98
10) 2-Chlorophenol	2.842	128	473123	27.27	ppm	85
11) 1,3-Dichlorobenzene	2.972	146	512821	25.35	ppm	99
13) 1,4-Dichlorobenzene	3.030	146	517539	25.19	ppm	100
14) Benzyl alcohol	3.111	108	306097	27.44	ppm	97
15) 1,2-Dichlorobenzene	3.164	146	489716	24.96	ppm	99
16) 2-Methylphenol	3.188	107	350318	24.96	ppm	97
17) bis(2-chloroisopropyl)...	3.226	45	845452	26.04	ppm	99
18) 4-Methylphenol	3.327	107	465958	25.05	ppm	100
19) N-Nitroso-di-n-propyla...	3.351	70	307409	23.62	ppm	94
20) Hexachloroethane	3.475	117	199174	25.38	ppm	99
23) Nitrobenzene	3.528	77	493471	24.47	ppm	99
24) Isophorone	3.758	82	967528	25.04	ppm	100
25) 2-Nitrophenol	3.840	139	207281	25.47	ppm	99
26) 2,4-Dimethylphenol	3.854	107	459153	24.57	ppm	99
27) Benzoic acid	3.940	105	255565	22.63	ppm	100
28) bis(2-Chloroethoxy)met...	3.964	93	517829	25.63	ppm	99
29) 3,5-Dimethylphenol	3.993	107	513128	25.46	ppm	100
30) 2,4-Dichlorophenol	4.080	162	383974	24.25	ppm	99
31) 3,4-Dimethylphenol	4.176	107	563717	25.62	ppm	99
32) 1,2,4-Trichlorobenzene	4.181	180	458482	25.35	ppm	99
33) Naphthalene	4.273	128	1231112	24.83	ppm	100
34) 4-Chloroaniline	4.316	127	512483	24.26	ppm	100
35) 2,6-Dichlorophenol	4.326	162	380739	25.41	ppm	99
36) Hexachlorobutadiene	4.398	225	307063	25.42	ppm	100

RU 02-08-16

575

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.837	107	375198	24.97	ppm	99
39)	2-Methylnaphthalene	5.038	142	847484	24.29	ppm	100
40)	1-Methylnaphthalene	5.153	142	789365	25.84	ppm	99
42)	Hexachlorocyclopentadiene	5.220	237	278733	20.68	ppm	99
43)	2,3,5-Trichlorophenol	5.225	196	316541	27.57	ppm	97
44)	2,4,6-Trichlorophenol	5.355	196	312201	25.56	ppm	99
45)	2,4,5-Trichlorophenol	5.394	196	324477	25.26	ppm	99
47)	2,3,4-Trichlorophenol	5.471	196	288666	25.64	ppm	99
48)	Biphenyl	5.586	154	1080316	24.70	ppm	99
49)	2-Chloronaphthalene	5.606	162	888400	24.70	ppm	100
50)	2-Nitroaniline	5.725	65	264162	26.04	ppm	99
51)	2,6-Dimethylnaphthalene	5.773	156	796029	25.70	ppm	100
52)	1,4-Dinitrobenzene	5.894	168	113568	25.50	ppm	97
53)	Dimethylphthalate	5.956	163	1030100	26.05	ppm	100
54)	1,3-Dinitrobenzene	5.980	168	136331	25.84	ppm	98
55)	2,6-Dinitrotoluene	6.019	165	204654	25.31	ppm	100
56)	1,2-Dinitrobenzene	6.082	168	84858	24.91	ppm	97
57)	Acenaphthylene	6.101	152	1385515	24.32	ppm	97
58)	3-Nitroaniline	6.216	138	215352	25.47	ppm	98
59)	Acenaphthene	6.312	153	882531	24.76	ppm	100
60)	2,4-Dinitrophenol	6.341	184	72069	20.74	ppm	97
61)	4-Nitrophenol	6.408	109	137625	24.86	ppm	99
62)	2,4-Dinitrotoluene	6.504	165	255773	24.33	ppm	98
63)	Dibenzofuran	6.518	168	1239160	24.48	ppm	100
64)	2,3,5,6-Tetrachlorophenol	6.610	230	203399	24.25	ppm	99
65)	2,3,4,6-Tetrachlorophenol	6.662	232	293976	25.48	ppm	98
66)	2,3,5-Trimethylnaphtha...	6.776	170	744817	25.70	ppm	99
67)	Diethylphthalate	6.814	149	1052601	26.28	ppm	100
68)	Fluorene	6.936	166	978678	24.82	ppm	99
69)	4-Chlorophenyl-phenyle...	6.940	204	491256	24.46	ppm	98
70)	4-Nitroaniline	6.954	138	210521	24.20	ppm	94
72)	4,6-Dinitro-2-methylph...	6.992	198	134236	22.98	ppm	97
73)	N-Nitrosodiphenylamine	7.077	169	751234	23.19	ppm	99
74)	Azobenzene	7.129	77	993325	26.14	ppm	100
76)	4-Bromophenyl-phenylether	7.509	248	285435	25.08	ppm	99
77)	Hexachlorobenzene	7.565	284	290392	25.07	ppm	99
78)	Pentachlorophenol	7.792	266	172981	26.12	ppm	97
79)	Dibenzothiophene	7.891	184	1509521	25.81	ppm	97
80)	Phenanthrene	8.037	178	1490080	25.06	ppm	100
82)	Anthracene	8.089	178	1455584	24.30	ppm	100
83)	Carbazole	8.267	167	1275569	25.06	ppm	99
84)	Di-n-butylphthalate	8.659	149	1660019	26.90	ppm	100
85)	1-Methylphenanthrene	8.702	192	1057563	25.08	ppm	99
86)	Fluoranthene	9.311	202	1638390	24.45	ppm	99
89)	Pyrene	9.547	202	1827352	25.76	ppm	99
91)	Butylbenzylphthalate	10.218	149	686803	28.55	ppm	99
92)	bis(2-ethylhexyl)adipate	10.295	129	518849	26.23	ppm	98
93)	3,3'-Dichlorobenzidine	10.747	252	512206	23.97	ppm	100
94)	Benzo(a)anthracene	10.777	228	1586069	24.74	ppm	99
95)	Chrysene	10.811	228	1527372	25.78	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.796	149	996004	26.82	ppm	99
98)	Di-n-octylphthalate	11.417	149	1721627	28.06	ppm	100
99)	Benzo(b)fluoranthene	11.806	252	1467439	25.33	ppm	96
100)	Benzo(k)fluoranthene	11.835	252	1435344	24.59	ppm	99
101)	Benzo(e)pyrene	12.091	252	1332727	24.93	ppm	98

RM 02-08-16

576

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
102) Benzo(a)pyrene	12.150	252	1350115	24.55 ppm	99
103) Perylene	12.242	252	1359345	24.63 ppm	99
104) Indeno(1,2,3-cd)pyrene	13.553	276	1552263	25.49 ppm	96
105) Dibenzo(a,h)anthracene	13.578	278	1255853	24.75 ppm	99
106) Benzo(g,h,i)perylene	13.966	276	1360492	25.99 ppm	100

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

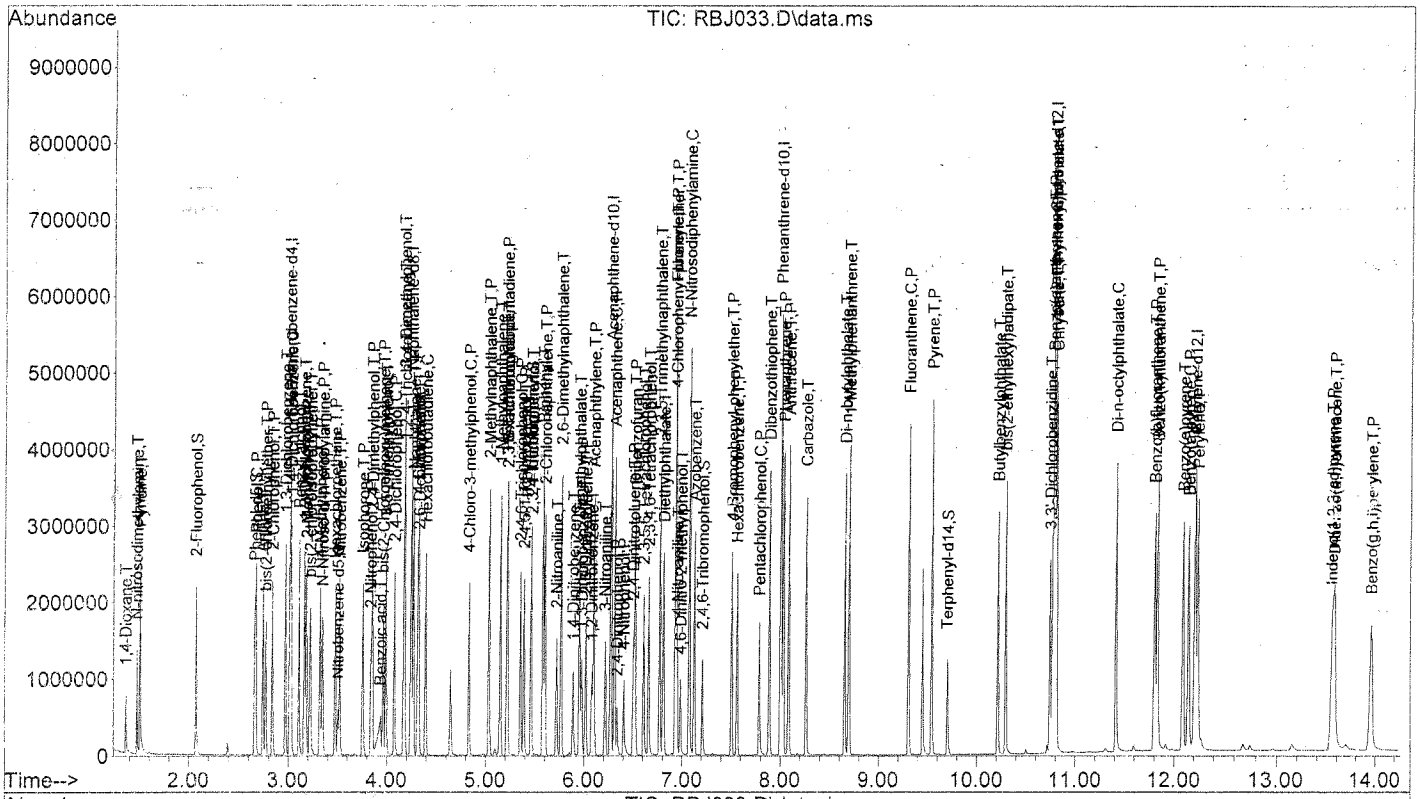
M 02-08-16

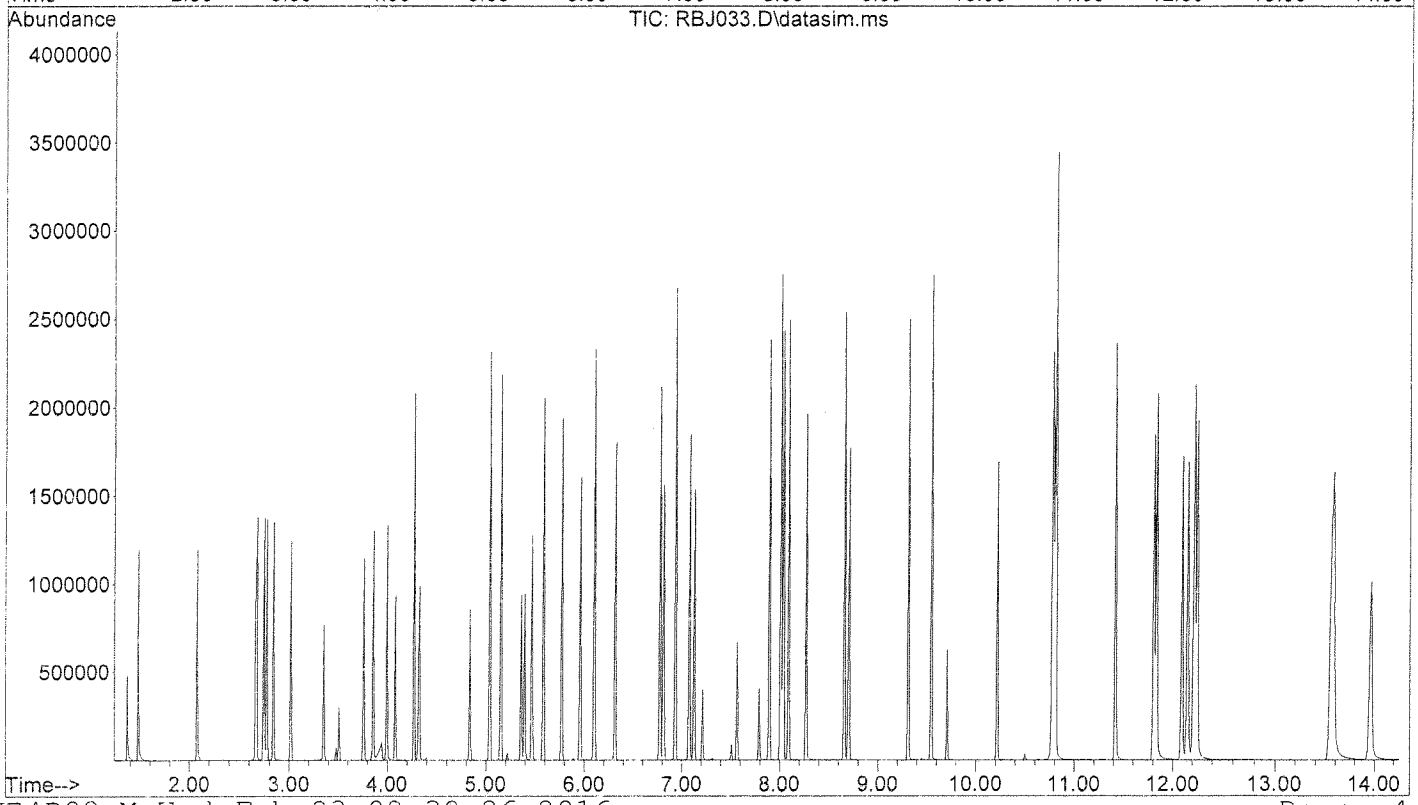
577

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B02\RBJ033.D
Acq On : 2 Feb 2016 18:46
Sample : ISVE4B022
Misc : ICV
Integrator: RTE
Quant Time: Feb 03 08:29:33 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 33
Operator: KVu
Inst : E4
Multiplr: 1.00





N 02-08-16

576

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ207
Instrument ID: TOE4

Project: CANNON AFB PBR
SDG No.: 16B094
DFTPP Injection Date: 02/22/16
DFTPP Injection Time: 09:31

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	45.91
68	Less than 2% of mass 69	0.67(1.6)1
69	% of mass 198	41.94
70	Less than 2% of mass 69	0.18(0.4)1
127	10.0 - 80.0% of mass 198	50.24
197	Less than 2.0% of mass 198	0.20
198	Base Peak, 100	100.00
199	5.0 - 9.0% of mass 198	7.15
275	10.0 - 60.0% of mass 198	23.75
365	Greater than 1.00% of mass 198	2.71
441	Present, but less than 24% of mass 442	9.82(14.9)2
442	Greater than 50% of mass 198	66.16
443	15.0 - 24.0% of mass 442	12.26(18.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	CSVE4B0209	RBJ208	02/22/16	10:01
2	MBLK1W	SVB018WB	RBJ210	02/22/16	10:39
3	LCS1W	SVB018WL	RBJ211	02/22/16	10:59
4	LCD1W	SVB018WC	RBJ212	02/22/16	11:18
5	MBLK2W	TXB005SB	RBJ213	02/22/16	11:38
6	CAFB-IDW-S-022016	B094-02	RBJ215	02/22/16	12:16

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:CANNON AFB PBR
SDG No.: 16B094
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	424119	3.02	1535126	4.25	929909	6.27
	UPPER LIMIT	848238	3.52	3070252	4.75	1859818	6.77
	LOWER LIMIT	212060	2.52	767563	3.75	464955	5.77
	SAMPLE ID						
1	SSTD025	528088	3.02	1962818	4.26	1144905	6.28
2	MBLK1W	454567	3.02	1707237	4.25	963841	6.28
3	LCS1W	533212	3.02	1972392	4.25	1136664	6.28
4	LCD1W	481183	3.02	1807777	4.25	1047868	6.28
5	MBLK2W	475233	3.02	1786003	4.25	1020404	6.28
6	CAFB-IDW-S-022016	499415	3.02	1853000	4.25	1056051	6.28

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RBJ007
Instrument ID: TOE4

Project:CANNON AFB PBR
SDG No.: 16B094
Date Analyzed: 02/02/16
Time Analyzed: 10:25

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1694673	8.01	1850796	10.79	1601653	12.22
	UPPER LIMIT	3389346	8.51	3701592	11.29	3203306	12.72
	LOWER LIMIT	847337	7.51	925398	10.29	800827	11.72
	SAMPLE ID						
1	SSTD025	2111950	8.02	2405604	10.81	2072006	12.25
2	MBLK1W	1729833	8.02	1866739	10.80	1698046	12.24
3	LCS1W	2057969	8.02	2339403	10.81	2142971	12.25
4	LCD1W	1820098	8.02	2055164	10.81	1858009	12.24
5	MBLK2W	1802874	8.02	1963078	10.80	1773709	12.24
6	CAFB-IDW-S-022016	1845640	8.02	1995094	10.80	1838631	12.24

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 :E4
IC Beginning DateTime :02/02/16 09:09
Spike Amount :25 PPM
CC/CV File :RBJ208
IC File :RBJ007

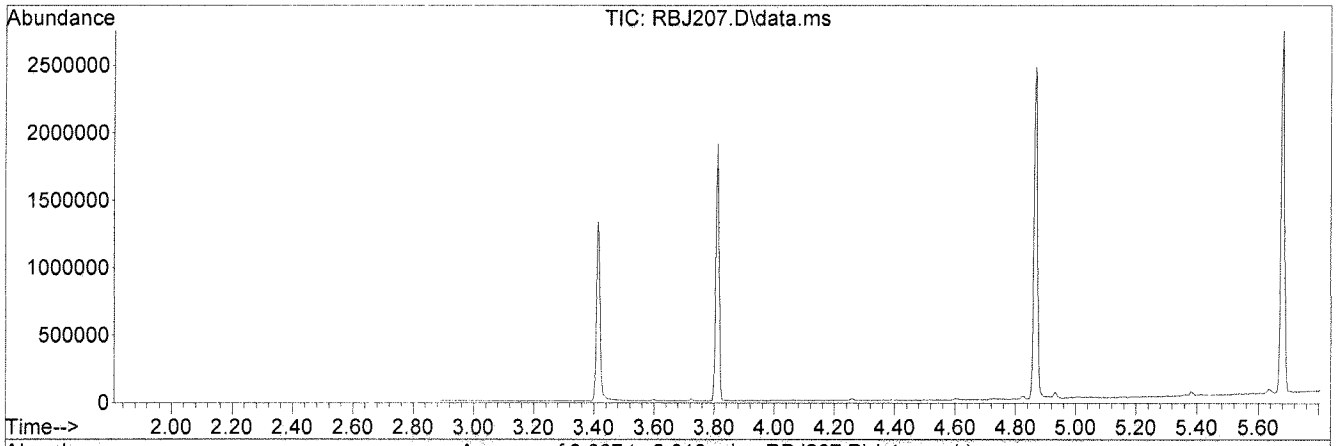
Column Spec :ZB-SEMI ID :0.18MM
IC Ending DateTime :02/02/16 11:23
HPChem Method :SVE4B02
Date_Time :02/22/16 10:01

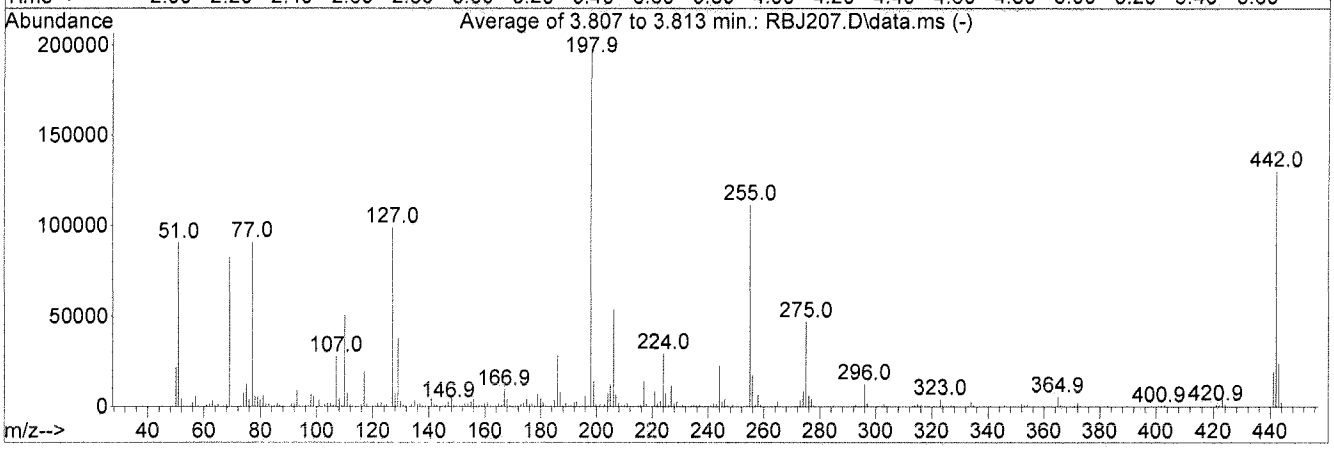
M IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AVRRF	CC Rtm	AVRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	528088	1	1	3.025	3.015	0				
2	1,4-Dioxane	22.160	-11.4	175256	0.531	0.599	1.367	1.367	6.63				
3	N-nitrosodimethylamine	22.507	-10.0	252634	0.765	0.850	1.481	1.477	7.37				
4	Pyridine	23.175	-7.3	467922	1.418	1.529	1.510	1.502	7.97				
5	2-Fluorophenol	23.932	-4.3	415101	1.258	1.314	2.085	2.072	1.13				
6	Phenol-d5	23.834	-4.7	510599	1.547	1.623	2.680	2.659	1.86				
7	Phenol	24.024	-3.9	533387	1.616	1.682	2.691	2.671	1.81				
8	Aniline	22.878	-8.5	646268	1.958	2.140	2.753	2.744	2.23				
9	bis(2-chloroethyl)ether	23.185	-7.3	390152	1.182	1.275	2.779	2.772	2.19				
10	2-Chlorophenol	25.551	-2.2	478661	1.450	1.419	2.852	2.838	3.81				
11	1,3-Dichlorobenzene	23.463	-6.1	512484	1.553	1.654	2.977	2.972	1.34				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	23.296	-6.8	516682	1.565	1.680	3.039	3.030	1.55				
14	Benzyl alcohol	24.157	-3.4	290900	0.881	0.912	3.121	3.109	2.45				
15	1,2-Dichlorobenzene	23.203	-7.2	491399	1.489	1.604	3.174	3.165	2.20				
16	2-Methylphenol	25.414	1.7	385101	1.167	1.148	3.202	3.184	1.83				
17	bis(2-chloroisopropyl)ether	21.320	-14.7	747197	2.264	2.655	3.236	3.229	2.22				
18	4-Methylphenol	23.370	-6.5	469226	1.422	1.521	3.341	3.321	4.06				
19	N-Nitroso-di-n-propylamine	24.354	-2.6	342205	1.037	1.064	3.356	3.351	5.54				
20	Hexachloroethane	22.935	-8.3	194300	0.589	0.642	3.480	3.477	2.07				
21	Naphthalene-d8	40.000	0	1962818	1	1	4.258	4.247	0				
22	Nitrobenzene-d5	22.223	-11.1	492216	0.401	0.451	3.519	3.508	1.58				
23	Nitrobenzene	21.587	-13.7	480057	0.391	0.453	3.538	3.528	1.42				
24	Isophorone	22.480	-10.1	957828	0.781	0.868	3.768	3.758	1.97				
25	2-Nitrophenol	26.819	7.3	240661	0.196	0.183	3.849	3.829	7.64				
26	2,4-Dimethylphenol	22.332	-10.7	460225	0.375	0.420	3.869	3.854	1.54				
27	Benzoic acid	23.014	-7.9	287123	0.234	0.243	3.964	3.946	15.58	-0.0135	0.2778		0.9993
28	bis(2-Chloroethoxy)methane	22.135	-11.5	493218	0.402	0.454	3.969	3.965	2.26				
29	3,5-Dimethylphenol	23.451	-6.2	521286	0.425	0.453	4.012	3.993	7.12				
30	2,4-Dichlorophenol	21.839	-12.6	381405	0.311	0.356	4.094	4.077	2.03				
31	3,4-Dimethylphenol	22.484	-10.1	543582	0.445	0.495	4.191	4.172	1.42				
32	1,2,4-Trichlorobenzene	21.463	-14.1	428065	0.349	0.406	4.191	4.179	2.33				
33	Naphthalene	23.490	-6.0	1284660	1.047	1.115	4.278	4.270	2.29				
34	4-Chloroaniline	23.366	-6.5	544273	0.444	0.475	4.326	4.315	1.94				
35	2,6-Dichlorophenol	22.416	-10.3	370400	0.302	0.337	4.335	4.324	1.66				
36	Hexachlorobutadiene	20.401	-18.4	271758	0.222	0.271	4.403	4.395	1.22				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	23.580	-5.7	390689	0.318	0.338	4.861	4.836	3.57				
39	2-Methylnaphthalene	22.841	-8.6	878958	0.716	0.784	5.048	5.032	2.67				
40	1-Methylnaphthalene	22.668	-9.3	763733	0.623	0.687	5.163	5.153	2.73				
41	Acenaphthene-d10	40.000	0	1144905	1	1	6.284	6.272	0				
42	Hexachlorocyclopentadiene	21.386	-14.5	307392	0.430	0.502	5.225	5.218	4.45				
43	2,3,5-Trichlorophenol	25.208	0.8	308576	0.431	0.428	5.244	5.223	9.04				
44	2,4,6-Trichlorophenol	22.727	-9.1	295910	0.414	0.455	5.374	5.356	4.02				
45	2,4,5-Trichlorophenol	23.023	-7.9	315318	0.441	0.478	5.418	5.399	3.93				
46	2-Fluorobiphenyl	22.374	-10.5	1023401	1.430	1.598	5.476	5.466	2.17				
47	2,3,4-Trichlorophenol	23.565	-5.7	282817	0.395	0.419	5.490	5.469	1.40				
48	Biphenyl	22.760	-9.0	1061184	1.483	1.629	5.596	5.585	2.80				
49	2-Chloronaphthalene	25.080	0.3	961931	1.344	1.340	5.620	5.606	3.36				
50	2-Nitroaniline	25.091	0.4	271391	0.379	0.378	5.740	5.721	6.20				
51	2,6-Dimethylnaphthalene	23.016	-7.9	760083	1.062	1.154	5.778	5.771	1.76				
52	1,4-Dinitrobenzene	27.401	2.6	130098	0.182	0.166	5.908	5.890	10.58				
53	Dimethylphthalate	23.699	-5.2	999036	1.396	1.473	5.961	5.955	1.25				
54	1,3-Dinitrobenzene	25.511	2.0	143487	0.201	0.197	6.000	5.979	9.11				
55	2,6-Dinitrotoluene	24.958	-0.2	215158	0.301	0.301	6.034	6.019	3.30				
56	1,2-Dinitrobenzene	25.714	2.9	93390	0.131	0.127	6.096	6.079	6.06				
57	Acenaphthylene	25.001	0.0	1518305	2.122	2.122	6.115	6.101	4.18				
58	3-Nitroaniline	26.290	5.2	237027	0.331	0.315	6.236	6.216	3.68				
59	Acenaphthene	23.364	-6.5	888003	1.241	1.328	6.325	6.312	1.93				
60	2,4-Dinitrophenol	26.861	7.4	102907	0.144	0.116	6.360	6.339	26.38	-0.0101	0.1488		0.9982
61	4-Nitrophenol	24.064	-3.7	142045	0.199	0.206	6.451	6.406	10.34				
62	2,4-Dinitrotoluene	25.738	3.0	288515	0.403	0.392	6.518	6.503	7.16				
63	Dibenzofuran	22.910	-8.4	1236626	1.728	1.886	6.533	6.519	1.94				
64	2,3,5,6-Tetrachlorophenol	23.489	-6.0	210047	0.294	0.312	6.629	6.609	7.84				
65	2,3,4,6-Tetrachlorophenol	23.922	-4.3	294290	0.411	0.430	6.681	6.661	4.55				
66	2,3,5-Trimethylnaphthalene	23.305	-6.8	720036	1.006	1.080	6.786	6.774	1.65				
67	Diethylphthalate	24.223	-3.1	1034633	1.446	1.492	6.818	6.811	1.03				
68	Fluorene	23.537	-5.9	989418	1.383	1.469	6.945	6.933	1.82				
69	4-Chlorophenyl-phenylether	22.310	-10.8	477784	0.668	0.748	6.945	6.939	1.34				
70	4-Nitroaniline	28.268	13.1	262161	0.366	0.324	6.973	6.951	8.12				
71	Phenanthrene-d10	40.000	0	2111950	1	1	8.023	8.008	0				
72	4,6-Dinitro-2-methylphenol	25.948	3.8	170887	0.129	0.112	7.011	6.988	21.93	-0.0075	0.1362		0.9998
73	N-Nitrosodiphenylamine	23.195	-7.5	837068	0.634	0.683	7.091	7.078	1.97				
74	Azobenzene	22.451	-10.2	950543	0.720	0.802	7.134	7.128	1.51				
75	2,4,6-Tribromophenol	26.988	8.0	136981	0.104	0.096	7.229	7.211	7.59				
76	4-Bromophenyl-phenylether	22.473	-10.1	284966	0.216	0.240	7.518	7.508	2.11				
77	Hexachlorobenzene	23.913	-4.3	308562	0.234	0.244	7.579	7.566	1.23				
78	Pentachlorophenol	27.323	-2.7	179434	0.136	0.140	7.811	7.789	12.24				
79	Dibenzothiophene	22.781	-8.9	1482147	1.124	1.234	7.905	7.891	2.50				
80	Phenanthrene	22.698	-9.2	1503854	1.139	1.255	8.046	8.034	1.91				
81	Dinoseb												
82	Anthracene	23.041	-7.8	1537659	1.165	1.264	8.103	8.090	0.90				
83	Carbazole	23.834	-4.7	1351586	1.024	1.074	8.281	8.267	1.46				
84	Di-n-butylphthalate	25.150	0.6	1729139	1.310	1.302	8.663	8.660	3.60				
85	1-Methylphenanthrene	22.919	-8.3	1076865	0.816	0.890	8.717	8.702	1.11				
86	Fluoranthene	22.806	-8.8	1702741	1.290	1.414	9.325	9.311	1.15				
87	Chrysene-d12	40.000	0	2405604	1	1	10.810	10.788	0				
88	Benzidine												
89	Pyrene	21.760	-13.0	1789843	1.190	1.368	9.566	9.547	3.42				
90	Terphenyl-d14	23.064	-7.7	1187724	0.790	0.856	9.725	9.713	1.41				
91	Butylbenzylphthalate	27.867	11.5	777169	0.517	0.464	10.222	10.219	11.98				
92	bis(2-ethylhexyl)adipate	28.515	14.1	654081	0.435	0.381	10.299	10.298	10.19				
93	3,3'-Dichlorobenzidine	26.181	4.7	648781	0.432	0.412	10.767	10.748	6.19				
94	Benzo(a)anthracene	22.907	-8.4	1702423	1.132	1.236	10.796	10.777	1.31				
95	Chrysene	22.478	-10.1	1544274	1.027	1.142	10.835	10.814	1.42				
96	bis(2-Ethylhexyl)phthalate	25.855	3.4	1113296	0.740	0.716	10.800	10.799	6.46				
97	Perylene-d12	40.000	0	2072006	1	1	12.246	12.215	0				
98	Di-n-octylphthalate	28.425	13.7	2000687	1.545	1.359	11.422	11.420	11.88				
99	Benzo(b)fluoranthene	25.042	0.2	1664030	1.285	1.283	11.835	11.809	3.32				
100	Benzo(k)fluoranthene	22.188	-11.5	1485750	1.147	1.293	11.863	11.837	2.85				
101	Benzo(e)pyrene	23.436	-9.2	1438547	1.111	1.184	12.125	12.094	1.87				
102	Benzo(a)pyrene	24.103	-3.6	1520565	1.174	1.218	12.183	12.152	2.60				
103	Perylene	23.206	-7.2	1469253	1.135	1.222	12.280	12.245	1.55				
104	Indeno(1,2,3-cd)pyrene	24.718	-1.1	1726853	1.333	1.349	13.616	13.560	5.04				
105	Dibenzo(a,h)anthracene	24.779	-0.9	1442185	1.114	1.124	13.635	13.584	4.34				
106	Benzo(g,h,i)perylene	23.940	-4.2	1437608	1.110	1.159	14.028	13.966	2.24				

Data Path : D:\DATA\16B22\
Data File : RBJ207.D
Acq On : 22 Feb 2016 9:31
Operator : KVu
Sample : DFTE4B0209
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP 8270D
Last Update : Tue Feb 02 13:55:35 2016





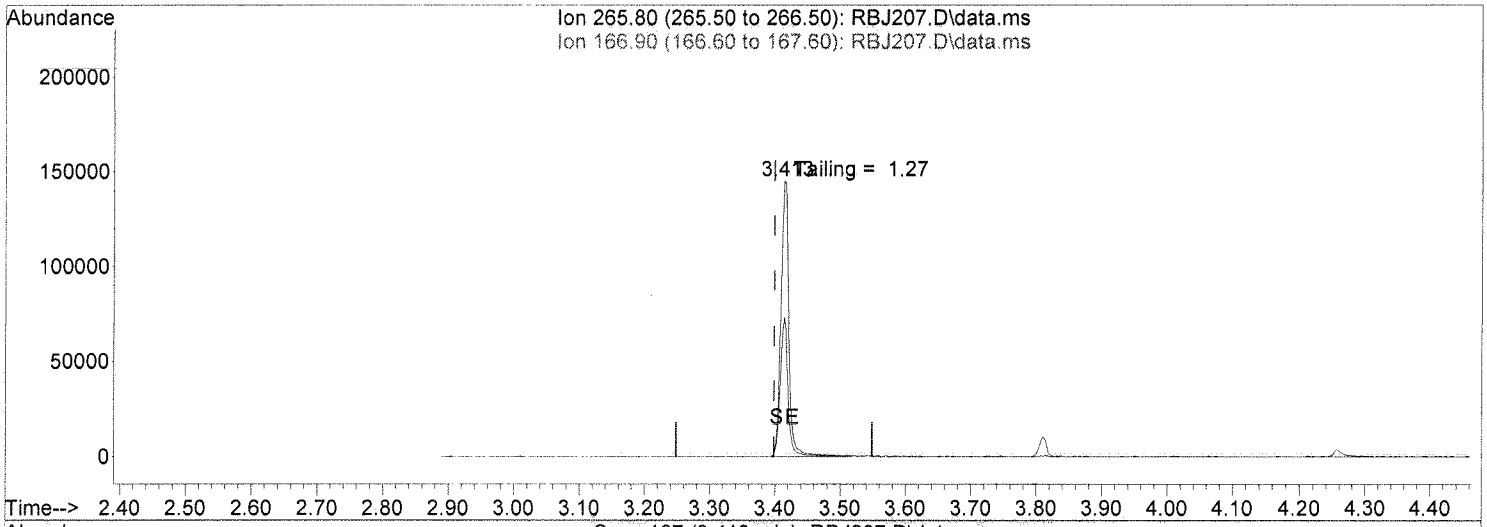
AutoFind: Scans 327, 328, 329; Background Corrected with Scan 319

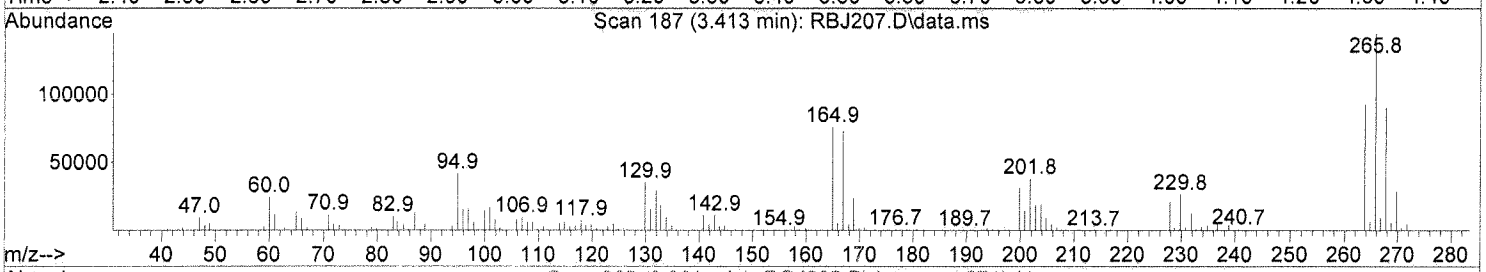
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	45.9	90392	PASS
68	69	0.00	2	1.6	1314	PASS
69	198	0.00	100	41.9	82589	PASS
70	69	0.00	2	0.4	357	PASS
127	198	10	80	50.2	98928	PASS
197	198	0.00	2	0.2	400	PASS
198	198	100	100	100.0	196907	PASS
199	198	5	9	7.2	14079	PASS
275	198	10	60	23.7	46763	PASS
365	198	1	100	2.7	5329	PASS
441	442	0.01	24	14.9	19346	PASS
442	198	50	100	66.2	130267	PASS
443	442	15	24	18.5	24131	PASS

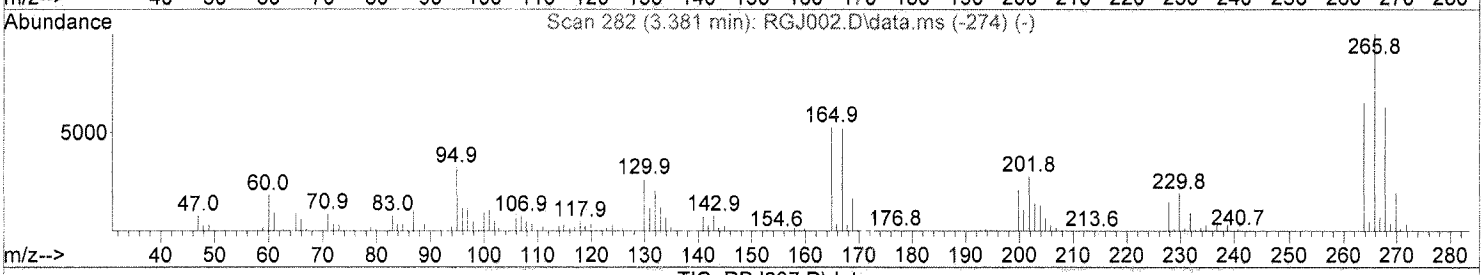
Quantitation Report (Qedit)

Data File : D:\DATA\16B22\RBJ207.D
Acq On : 22 Feb 2016 9:31
Sample : DFTE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 23 08:09:07 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:35 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ207.D\data.ms

(1) Pentachlorophenol (T)

3.413min (+0.014) 67.23 ppm

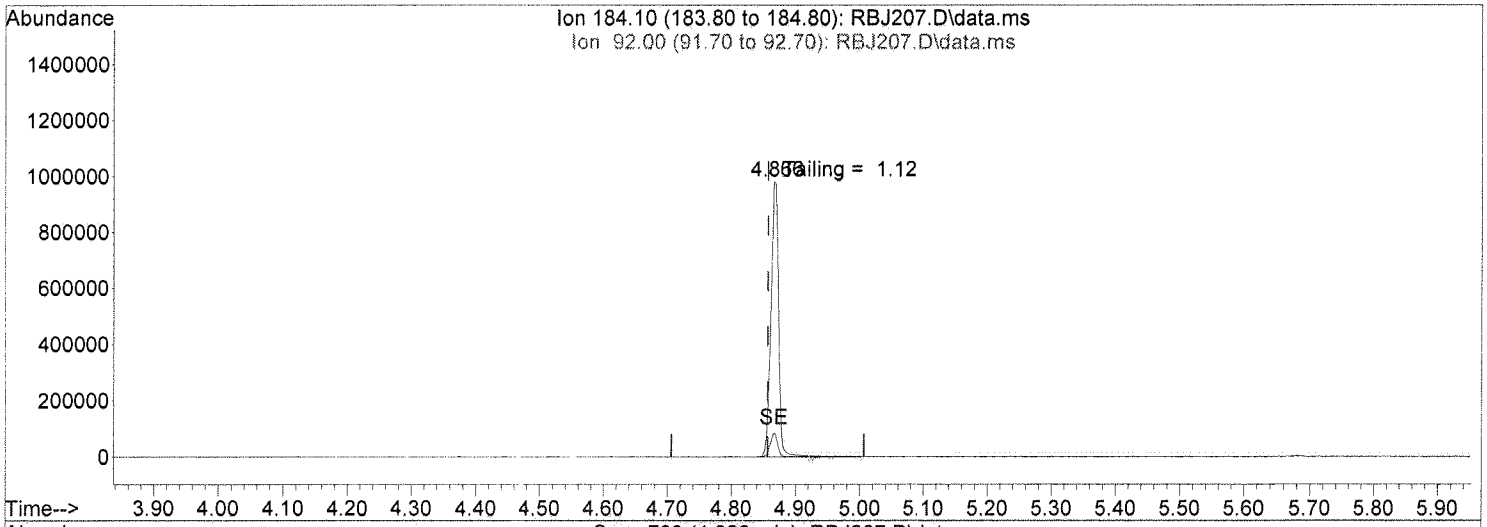
response 122994

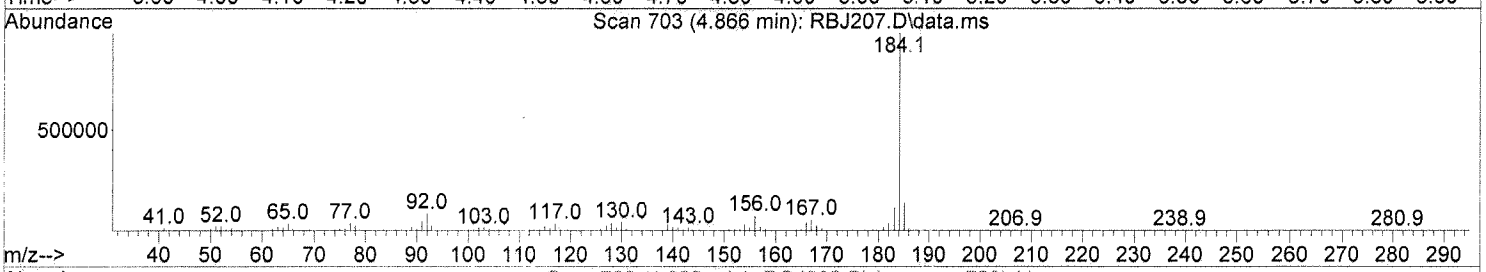
Ion	Exp%	Act%
265.80	100	100
166.90	53.80	48.50
0.00	0.00	0.00
0.00	0.00	0.00

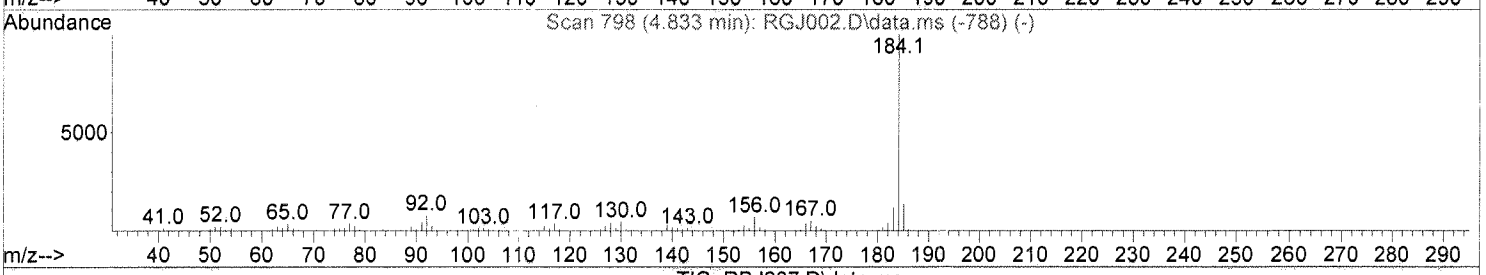
Quantitation Report (Qedit)

Data File : D:\DATA\16B22\RBJ207.D
Acq On : 22 Feb 2016 9:31
Sample : DFTE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 23 08:09:07 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:35 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ207.D\data.ms

(3) Benzidine (T)

4.866min (+0.009) 66.13 ppm

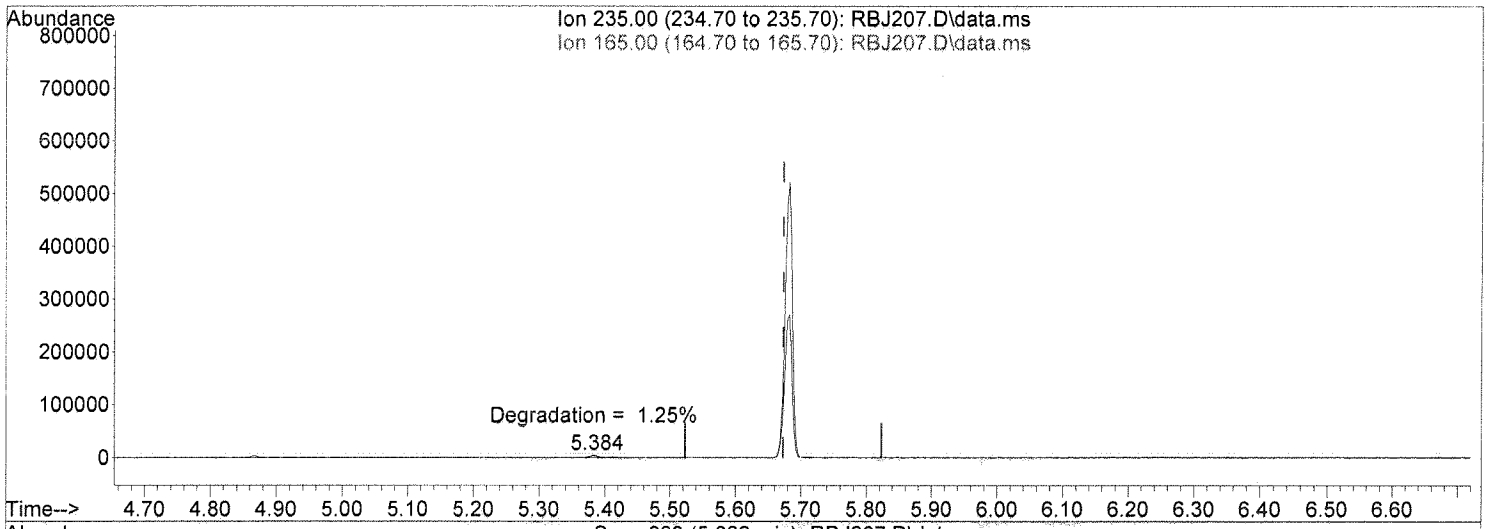
response 818789

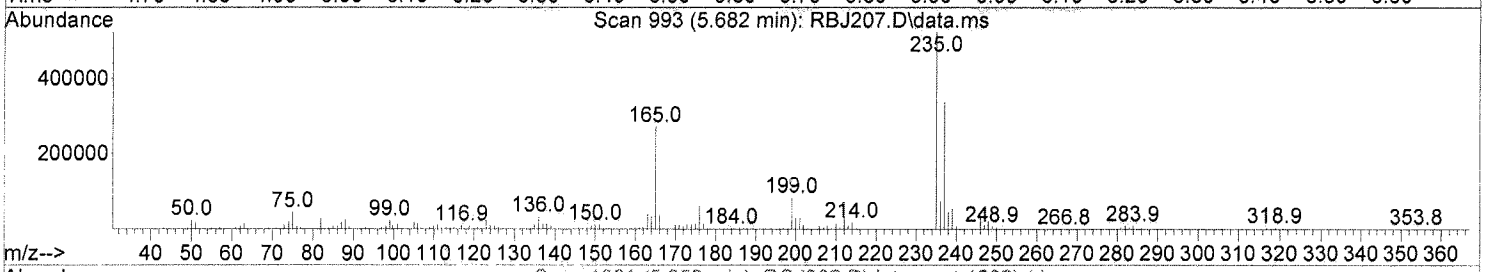
Ion	Exp%	Act%
184.10	100	100
92.00	7.50	8.39
0.00	0.00	0.00
0.00	0.00	0.00

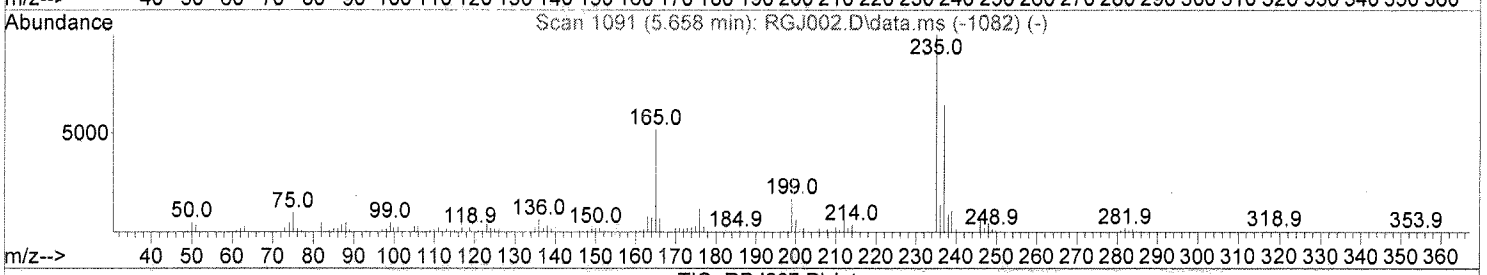
Quantitation Report (Qedit)

Data File : D:\DATA\16B22\RBJ207.D
Acq On : 22 Feb 2016 9:31
Sample : DFTE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 23 08:09:07 2016
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP 8270D
QLast Update : Tue Feb 02 13:55:35 2016
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00







TIC: RBJ207.D\data.ms

(6) DDT (T)

5.682min (+0.009) 71.38 ppm

response 410201

Ion	Exp%	Act%
235.00	100	100
165.00	51.10	52.64
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	125	0.00
2	T	1,4-Dioxane	25.000	22.160	11.4	114	0.00
3	T	N-nitrosodimethylamine	25.000	22.507	10.0	109	0.00
4	T	Pyridine	25.000	23.175	7.3	108	0.00
5	S	2-Fluorophenol	25.000	23.932	4.3	117	0.01
6	S	Phenol-d5	25.000	23.834	4.7	115	0.02
7	C,P	Phenol	25.000	24.024	3.9	117	0.02
8	T	Aniline	25.000	22.878	8.5	111	0.01
9	T,P	bis(2-chloroethyl)ether	25.000	23.185	7.3	112	0.00
10	T,P	2-Chlorophenol	25.000	25.551	-2.2	128	0.02
11	T	1,3-Dichlorobenzene	25.000	23.463	6.1	115	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	0.00
13	C	1,4-Dichlorobenzene	25.000	23.296	6.8	114	0.01
14	T	Benzyl alcohol	25.000	24.157	3.4	118	0.00
15	T	1,2-Dichlorobenzene	25.000	23.203	7.2	113	0.00
16	T,P	2-Methylphenol	25.000	25.414	-1.7	125	0.02
17	T	bis(2-chloroisopropyl)ether	25.000	21.320	14.7	105	0.00
18	T,P	4-Methylphenol	25.000	23.370	6.5	114	0.02
19	P,P	N-Nitroso-di-n-propylamine	25.000	24.354	2.6	121	0.00
20	T,P	Hexachloroethane	25.000	22.935	8.3	111	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	128	0.01
22	S	Nitrobenzene-d5	25.000	22.223	11.1	111	0.00
23	T,P	Nitrobenzene	25.000	21.587	13.7	108	0.00
24	T,P	Isophorone	25.000	22.480	10.1	113	0.00
25	C,P	2-Nitrophenol	25.000	26.819	-7.3	128	0.00
26	T,P	2,4-Dimethylphenol	25.000	22.332	10.7	112	0.01
27	T	Benzoic acid	25.000	23.014	7.9	118	0.03
28	T,P	bis(2-Chloroethoxy)methane	25.000	22.135	11.5	111	0.00
29	T	3,5-Dimethylphenol	25.000	23.452	6.2	113	0.02
30	C,P	2,4-Dichlorophenol	25.000	21.839	12.6	109	0.01
31	T	3,4-Dimethylphenol	25.000	22.484	10.1	112	0.02
32	T	1,2,4-Trichlorobenzene	25.000	21.463	14.1	109	0.00
33	T,P	Naphthalene	25.000	23.490	6.0	119	0.00
34	T	4-Chloroaniline	25.000	23.366	6.5	117	0.00
35	T	2,6-Dichlorophenol	25.000	22.416	10.3	112	0.00
36	C	Hexachlorobutadiene	25.000	20.401	18.4	103	0.01
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	23.580	5.7	117	0.02
39	T,P	2-Methylnaphthalene	25.000	22.841	8.6	115	0.00
40	T	1-Methylnaphthalene	25.000	22.668	9.3	114	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	123	0.00
42	P	Hexachlorocyclopentadiene	25.000	21.386	14.5	104	0.00
43	T	2,3,5-Trichlorophenol	25.000	25.208	-0.8	119	0.02
44	C,P	2,4,6-Trichlorophenol	25.000	22.727	9.1	110	0.02
45	T,P	2,4,5-Trichlorophenol	25.000	23.023	7.9	110	0.02
46	S	2-Fluorobiphenyl	25.000	22.374	10.5	110	0.00
47	T	2,3,4-Trichlorophenol	25.000	23.564	5.7	115	0.02
48	T	Biphenyl	25.000	22.760	9.0	112	0.00
49	T,P	2-Chloronaphthalene	25.000	25.080	-0.3	126	0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	25.092	-0.4	118	0.02
51	T	2,6-Dimethylnaphthalene	25.000	23.016	7.9	112	0.00
52	T	1,4-Dinitrobenzene	25.000	27.401	-9.6	127	0.02
53	T	Dimethylphthalate	25.000	23.699	5.2	116	0.00
54	T	1,3-Dinitrobenzene	25.000	25.511	-2.0	118	0.02
55	T,P	2,6-Dinitrotoluene	25.000	24.958	0.2	120	0.01
56	T	1,2-Dinitrobenzene	25.000	25.714	-2.9	120	0.01
57	T,P	Acenaphthylene	25.000	25.001	-0.0	115	0.01
58	T	3-Nitroaniline	25.000	26.290	-5.2	126	0.02
59	C,P	Acenaphthene	25.000	23.364	6.5	114	0.00
60	P	2,4-Dinitrophenol	25.000	26.861	-7.4	134	0.02
61	P	4-Nitrophenol	25.000	24.064	3.7	113	0.04
62	T,P	2,4-Dinitrotoluene	25.000	25.738	-3.0	120	0.01
63	T,P	Dibenzofuran	25.000	22.910	8.4	112	0.01
64	T	2,3,5,6-Tetrachlorophenol	25.000	23.489	6.0	110	0.02
65	T	2,3,4,6-Tetrachlorophenol	25.000	23.922	4.3	116	0.02
66	T	2,3,5-Trimethylnaphthalene	25.000	23.302	6.8	114	0.00
67	T	Diethylphthalate	25.000	24.223	3.1	117	0.00
68	T,P	Fluorene	25.000	23.537	5.9	115	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	22.310	10.8	110	0.00
70	T	4-Nitroaniline	25.000	28.268	-13.1	130	0.02
71	I	Phenanthrene-d10	40.000	40.000	0.0	125	0.01
72	T	4,6-Dinitro-2-methylphenol	25.000	25.949	-3.8	129	0.02
73	C	N-Nitrosodiphenylamine	25.000	23.195	7.2	115	0.01
74	T	Azobenzene	25.000	22.451	10.2	112	0.00
75	S	2,4,6-Tribromophenol	25.000	26.988	-8.0	129	0.02
76	T,P	4-Bromophenyl-phenylether	25.000	22.473	10.1	113	0.00
77	T,P	Hexachlorobenzene	25.000	23.913	4.3	120	0.01
78	C,P	Pentachlorophenol	25.000	24.323	2.7	114	0.02
79	T	Dibenzothiophene	25.000	22.780	8.9	114	0.01
80	T,P	Phenanthrene	25.000	22.698	9.2	113	0.01
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	23.041	7.8	113	0.01
83	T	Carbazole	25.000	23.834	4.7	119	0.01
84	T	Di-n-butylphthalate	25.000	25.150	-0.6	121	0.00
85	T	1-Methylphenanthrene	25.000	22.919	8.3	113	0.01
86	C,P	Fluoranthene	25.000	22.806	8.8	113	0.01
87	I	Chrysene-d12	40.000	40.000	0.0	130	0.02
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	21.760	13.0	107	0.02
90	S	Terphenyl-d14	25.000	23.064	7.7	118	0.00
91	T	Butylbenzylphthalate	25.000	27.867	-11.5	135	0.00
92	T	bis(2-ethylhexyl)adipate	25.000	28.515	-14.1	139	0.00
93	T	3,3'-Dichlorobenzidine	25.000	26.181	-4.7	131	0.02
94	T,P	Benzo(a)anthracene	25.000	22.907	8.4	118	0.02
95	T,P	Chrysene	25.000	22.478	10.1	116	0.02
96	T	bis(2-Ethylhexyl)phthalate	25.000	25.855	-3.4	129	0.00
97	I	Perylene-d12	40.000	40.000	0.0	129	0.03

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	28.425	-13.7	138	0.00
99	T,P	Benzo(b)fluoranthene	25.000	25.042	-0.2	124	0.02
100	T,P	Benzo(k)fluoranthene	25.000	22.189	11.2	117	0.02
101	T	Benzo(e)pyrene	25.000	23.458	6.2	119	0.03
102	C,P	Benzo(a)pyrene	25.000	24.102	3.6	123	0.03
103	T	Perylene	25.000	23.206	7.2	119	0.03
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	24.718	1.1	125	0.05
105	T,P	Dibenzo(a,h)anthracene	25.000	24.779	0.9	124	0.05
106	T,P	Benzo(g,h,i)perylene	25.000	23.940	4.2	122	0.06

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

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	125	0.00
2	T	1,4-Dioxane	0.599	0.531	11.4	114	0.00
3	T	N-nitrosodimethylamine	0.850	0.765	10.0	109	0.00
4	T	Pyridine	1.529	1.418	7.3	108	0.00
5	S	2-Fluorophenol	1.314	1.258	4.3	117	0.01
6	S	Phenol-d5	1.623	1.547	4.7	115	0.02
7	C,P	Phenol	1.682	1.616	3.9	117	0.02
8	T	Aniline	2.140	1.958	8.5	111	0.01
9	T,P	bis(2-chloroethyl)ether	1.275	1.182	7.3	112	0.00
10	T,P	2-Chlorophenol	1.419	1.450	-2.2	128	0.02
11	T	1,3-Dichlorobenzene	1.654	1.553	6.1	115	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	0.00
13	C	1,4-Dichlorobenzene	1.680	1.565	6.8	114	0.01
14	T	Benzyl alcohol	0.912	0.881	3.4	118	0.00
15	T	1,2-Dichlorobenzene	1.604	1.489	7.2	113	0.00
16	T,P	2-Methylphenol	1.148	1.167	-1.7	125	0.02
17	T	bis(2-chloroisopropyl)ether	2.655	2.264	14.7	105	0.00
18	T,P	4-Methylphenol	1.521	1.422	6.5	114	0.02
19	P,P	N-Nitroso-di-n-propylamine	1.064	1.037	2.5	121	0.00
20	T,P	Hexachloroethane	0.642	0.589	8.3	111	0.00
21	I	Naphthalene-d8	1.000	1.000	0.0	128	0.01
22	S	Nitrobenzene-d5	0.451	0.401	11.1	111	0.00
23	T,P	Nitrobenzene	0.453	0.391	13.7	108	0.00
24	T,P	Isophorone	0.868	0.781	10.0	113	0.00
25	C,P	2-Nitrophenol	0.183	0.196	-7.1	128	0.00
26	T,P	2,4-Dimethylphenol	0.420	0.375	10.7	112	0.01
27	T	Benzoic acid	0.243	0.234	3.7	118	0.03
28	T,P	bis(2-Chloroethoxy)methane	0.454	0.402	11.5	111	0.00
29	T	3,5-Dimethylphenol	0.453	0.425	6.2	113	0.02
30	C,P	2,4-Dichlorophenol	0.356	0.311	12.6	109	0.01
31	T	3,4-Dimethylphenol	0.495	0.445	10.1	112	0.02
32	T	1,2,4-Trichlorobenzene	0.406	0.349	14.0	109	0.00
33	T,P	Naphthalene	1.115	1.047	6.1	119	0.00
34	T	4-Chloroaniline	0.475	0.444	6.5	117	0.00
35	T	2,6-Dichlorophenol	0.337	0.302	10.4	112	0.00
36	C	Hexachlorobutadiene	0.271	0.222	18.1	103	0.01
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.338	0.318	5.9	117	0.02
39	T,P	2-Methylnaphthalene	0.784	0.716	8.7	115	0.00
40	T	1-Methylnaphthalene	0.687	0.623	9.3	114	0.00
41	I	Acenaphthene-d10	1.000	1.000	0.0	123	0.00
42	P	Hexachlorocyclopentadiene	0.502	0.430	14.3	104	0.00
43	T	2,3,5-Trichlorophenol	0.428	0.431	-0.7	119	0.02
44	C,P	2,4,6-Trichlorophenol	0.455	0.414	9.0	110	0.02
45	T,P	2,4,5-Trichlorophenol	0.478	0.441	7.7	110	0.02
46	S	2-Fluorobiphenyl	1.598	1.430	10.5	110	0.00
47	T	2,3,4-Trichlorophenol	0.419	0.395	5.7	115	0.02
48	T	Biphenyl	1.629	1.483	9.0	112	0.00
49	T,P	2-Chloronaphthalene	1.340	1.344	-0.3	126	0.01

551

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.378	0.379	-0.3	118	0.02
51	T	2,6-Dimethylnaphthalene	1.154	1.062	8.0	112	0.00
52	T	1,4-Dinitrobenzene	0.166	0.182	-9.6	127	0.02
53	T	Dimethylphthalate	1.473	1.396	5.2	116	0.00
54	T	1,3-Dinitrobenzene	0.197	0.201	-2.0	118	0.02
55	T,P	2,6-Dinitrotoluene	0.301	0.301	0.0	120	0.01
56	T	1,2-Dinitrobenzene	0.127	0.131	-3.1	120	0.01
57	T,P	Acenaphthylene	2.122	2.122	0.0	115	0.01
58	T	3-Nitroaniline	0.315	0.331	-5.1	126	0.02
59	C,P	Acenaphthene	1.328	1.241	6.6	114	0.00
60	P	2,4-Dinitrophenol	0.116	0.144	-24.1#	134	0.02
61	P	4-Nitrophenol	0.206	0.199	3.4	113	0.04
62	T,P	2,4-Dinitrotoluene	0.392	0.403	-2.8	120	0.01
63	T,P	Dibenzofuran	1.886	1.728	8.4	112	0.01
64	T	2,3,5,6-Tetrachlorophenol	0.312	0.294	5.8	110	0.02
65	T	2,3,4,6-Tetrachlorophenol	0.430	0.411	4.4	116	0.02
66	T	2,3,5-Trimethylnaphthalene	1.080	1.006	6.9	114	0.00
67	T	Diethylphthalate	1.492	1.446	3.1	117	0.00
68	T,P	Fluorene	1.469	1.383	5.9	115	0.00
69	T,P	4-Chlorophenyl-phenylether	0.748	0.668	10.7	110	0.00
70	T	4-Nitroaniline	0.324	0.366	-13.0	130	0.02
71	I	Phenanthrene-d10	1.000	1.000	0.0	125	0.01
72	T	4,6-Dinitro-2-methylphenol	0.112	0.129	-15.2	129	0.02
73	C	N-Nitrosodiphenylamine	0.683	0.634	7.2	115	0.01
74	T	Azobenzene	0.802	0.720	10.2	112	0.00
75	S	2,4,6-Tribromophenol	0.096	0.104	-8.3	129	0.02
76	T,P	4-Bromophenyl-phenylether	0.240	0.216	10.0	113	0.00
77	T,P	Hexachlorobenzene	0.244	0.234	4.1	120	0.01
78	C,P	Pentachlorophenol	0.140	0.136	2.9	114	0.02
79	T	Dibenzothiophene	1.234	1.124	8.9	114	0.01
80	T,P	Phenanthrene	1.255	1.139	9.2	113	0.01
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.264	1.165	7.8	113	0.01
83	T	Carbazole	1.074	1.024	4.7	119	0.01
84	T	Di-n-butylphthalate	1.302	1.310	-0.6	121	0.00
85	T	1-Methylphenanthrene	0.890	0.816	8.3	113	0.01
86	C,P	Fluoranthene	1.414	1.290	8.8	113	0.01
87	I	Chrysene-d12	1.000	1.000	0.0	130	0.02
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.368	1.190	13.0	107	0.02
90	S	Terphenyl-d14	0.856	0.790	7.7	118	0.00
91	T	Butylbenzylphthalate	0.464	0.517	-11.4	135	0.00
92	T	bis(2-ethylhexyl)adipate	0.381	0.435	-14.2	139	0.00
93	T	3,3'-Dichlorobenzidine	0.412	0.432	-4.9	131	0.02
94	T,P	Benzo(a)anthracene	1.236	1.132	8.4	118	0.02
95	T,P	Chrysene	1.142	1.027	10.1	116	0.02
96	T	bis(2-Ethylhexyl)phthalate	0.716	0.740	-3.4	129	0.00
97	I	Perylene-d12	1.000	1.000	0.0	129	0.03

Evaluate Continuing Calibration Report

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.359	1.545	-13.7	138	0.00
99	T,P	Benzo(b)fluoranthene	1.283	1.285	-0.2	124	0.02
100	T,P	Benzo(k)fluoranthene	1.293	1.147	11.3	117	0.02
101	T	Benzo(e)pyrene	1.184	1.111	6.2	119	0.03
102	C,P	Benzo(a)pyrene	1.218	1.174	3.6	123	0.03
103	T	Perylene	1.222	1.135	7.1	119	0.03
104	T,P	Indeno(1,2,3-cd)pyrene	1.349	1.333	1.2	125	0.05
105	T,P	Dibenzo(a,h)anthracene	1.124	1.114	0.9	124	0.05
106	T,P	Benzo(g,h,i)perylene	1.159	1.110	4.2	122	0.06

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

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.025	152	528088	40.00	ppm	0.00
21) Naphthalene-d8	4.258	136	1962818	40.00	ppm	0.01
41) Acenaphthene-d10	6.284	164	1144905	40.00	ppm	0.00
71) Phenanthrene-d10	8.023	188	2111950	40.00	ppm	0.01
87) Chrysene-d12	10.810	240	2405604	40.00	ppm	0.02
97) Perylene-d12	12.246	264	2072006	40.00	ppm	0.03
System Monitoring Compounds						
5) 2-Fluorophenol	2.085	112	415101	23.93	ppm	0.01
Spiked Amount 30.000			Recovery =	79.77%		
6) Phenol-d5	2.680	99	510599	23.83	ppm	0.02
Spiked Amount 30.000			Recovery =	79.43%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.519	82	492216	22.22	ppm	0.00
Spiked Amount 10.000			Recovery =	222.20%		
46) 2-Fluorobiphenyl	5.476	172	1023401	22.37	ppm	0.00
Spiked Amount 10.000			Recovery =	223.70%		
75) 2,4,6-Tribromophenol	7.229	330	136981	26.99	ppm	0.02
Spiked Amount 30.000			Recovery =	89.97%		
90) Terphenyl-d14	9.725	244	1187724	23.06	ppm	0.00
Spiked Amount 10.000			Recovery =	230.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.367	88	175256	22.16	ppm	95
3) N-nitrosodimethylamine	1.481	74	252634	22.51	ppm	86
4) Pyridine	1.510	79	467922	23.18	ppm	95
7) Phenol	2.691	94	533387	24.02	ppm	93
8) Aniline	2.753	93	646268	22.88	ppm	99
9) bis(2-chloroethyl)ether	2.779	93	390152	23.18	ppm	99
10) 2-Chlorophenol	2.852	128	478661	25.55	ppm	87
11) 1,3-Dichlorobenzene	2.977	146	512484	23.46	ppm	99
13) 1,4-Dichlorobenzene	3.039	146	516682	23.30	ppm	99
14) Benzyl alcohol	3.121	108	290900	24.16	ppm	91
15) 1,2-Dichlorobenzene	3.174	146	491399	23.20	ppm	100
16) 2-Methylphenol	3.202	107	385101	25.41	ppm	99
17) bis(2-chloroisopropyl)...	3.236	45	747197	21.32	ppm	99
18) 4-Methylphenol	3.341	107	469226	23.37	ppm	90
19) N-Nitroso-di-n-propyla...	3.356	70	342205	24.35	ppm	93
20) Hexachloroethane	3.480	117	194300	22.94	ppm	99
23) Nitrobenzene	3.538	77	480057	21.59	ppm	94
24) Isophorone	3.768	82	957828	22.48	ppm	97
25) 2-Nitrophenol	3.849	139	240661	26.82	ppm	70
26) 2,4-Dimethylphenol	3.869	107	460225	22.33	ppm	98
27) Benzoic acid	3.964	105	287123	23.01	ppm	97
28) bis(2-Chloroethoxy)met...	3.969	93	493218	22.14	ppm	98
29) 3,5-Dimethylphenol	4.012	107	521286	23.45	ppm	100
30) 2,4-Dichlorophenol	4.094	162	381405	21.84	ppm	99
31) 3,4-Dimethylphenol	4.191	107	545582	22.48	ppm	96
32) 1,2,4-Trichlorobenzene	4.191	180	428065	21.46	ppm	99
33) Naphthalene	4.278	128	1284660	23.49	ppm	100
34) 4-Chloroaniline	4.326	127	544273	23.37	ppm	100
35) 2,6-Dichlorophenol	4.336	162	370400	22.42	ppm	99
36) Hexachlorobutadiene	4.403	225	271758	20.40	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.861	107	390689	23.58	ppm	93
39) 2-Methylnaphthalene	5.048	142	878958	22.84	ppm	100
40) 1-Methylnaphthalene	5.163	142	763733	22.67	ppm	100
42) Hexachlorocyclopentadiene	5.225	237	307392	21.39	ppm	100
43) 2,3,5-Trichlorophenol	5.244	196	308576	25.21	ppm	96
44) 2,4,6-Trichlorophenol	5.374	196	295910	22.73	ppm	100
45) 2,4,5-Trichlorophenol	5.418	196	315318	23.02	ppm	97
47) 2,3,4-Trichlorophenol	5.490	196	282817	23.56	ppm	99
48) Biphenyl	5.596	154	1061184	22.76	ppm	99
49) 2-Chloronaphthalene	5.620	162	961931	25.08	ppm	94
50) 2-Nitroaniline	5.740	65	271391	25.09	ppm	95
51) 2,6-Dimethylnaphthalene	5.778	156	760083	23.02	ppm	89
52) 1,4-Dinitrobenzene	5.908	168	130098	27.40	ppm	91
53) Dimethylphthalate	5.961	163	999036	23.70	ppm	100
54) 1,3-Dinitrobenzene	6.000	168	143487	25.51	ppm	78
55) 2,6-Dinitrotoluene	6.034	165	215158	24.96	ppm	94
56) 1,2-Dinitrobenzene	6.096	168	93390	25.71	ppm	96
57) Acenaphthylene	6.116	152	1518305	25.00	ppm	99
58) 3-Nitroaniline	6.236	138	237027	26.29	ppm	91
59) Acenaphthene	6.322	153	888003	23.36	ppm	99
60) 2,4-Dinitrophenol	6.360	184	102907	26.86	ppm	96
61) 4-Nitrophenol	6.451	109	142045	24.06	ppm	87
62) 2,4-Dinitrotoluene	6.518	165	288515	25.74	ppm	94
63) Dibenzofuran	6.533	168	1236626	22.91	ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.629	230	210047	23.49	ppm	95
65) 2,3,4,6-Tetrachlorophenol	6.681	232	294290	23.92	ppm	97
66) 2,3,5-Trimethylnaphtha...	6.786	170	720036	23.30	ppm	99
67) Diethylphthalate	6.818	149	1034633	24.22	ppm	99
68) Fluorene	6.945	166	989418	23.54	ppm	100
69) 4-Chlorophenyl-phenyle...	6.945	204	477784	22.31	ppm	99
70) 4-Nitroaniline	6.973	138	262161	28.27	ppm	96
72) 4,6-Dinitro-2-methylph...	7.011	198	170887	25.95	ppm	94
73) N-Nitrosodiphenylamine	7.091	169	837068	23.20	ppm	100
74) Azobenzene	7.134	77	950543	22.45	ppm	99
76) 4-Bromophenyl-phenylether	7.518	248	284966	22.47	ppm	99
77) Hexachlorobenzene	7.579	284	308562	23.91	ppm	99
78) Pentachlorophenol	7.811	266	179434	24.32	ppm	97
79) Dibenzothiophene	7.905	184	1484147	22.78	ppm	94
80) Phenanthrene	8.046	178	1503854	22.70	ppm	99
82) Anthracene	8.103	178	1537659	23.04	ppm	100
83) Carbazole	8.281	167	1351586	23.83	ppm	100
84) Di-n-butylphthalate	8.664	149	1729139	25.15	ppm	100
85) 1-Methylphenanthrene	8.717	192	1076865	22.92	ppm	100
86) Fluoranthene	9.325	202	1702741	22.81	ppm	96
89) Pyrene	9.566	202	1789843	21.76	ppm	94
91) Butylbenzylphthalate	10.222	149	777169	27.87	ppm	98
92) bis(2-ethylhexyl)adipate	10.299	129	654081	28.52	ppm	90
93) 3,3'-Dichlorobenzidine	10.766	252	648781	26.18	ppm	99
94) Benzo(a)anthracene	10.796	228	1702423	22.91	ppm	88
95) Chrysene	10.835	228	1544274	22.48	ppm	99
96) bis(2-Ethylhexyl)phtha...	10.801	149	1113296	25.85	ppm	99
98) Di-n-octylphthalate	11.421	149	2000687	28.43	ppm	100
99) Benzo(b)fluoranthene	11.835	252	1664030	25.04	ppm	97
100) Benzo(k)fluoranthene	11.864	252	1485750	22.19	ppm	97
101) Benzo(e)pyrene	12.125	252	1438547	23.46	ppm	96

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

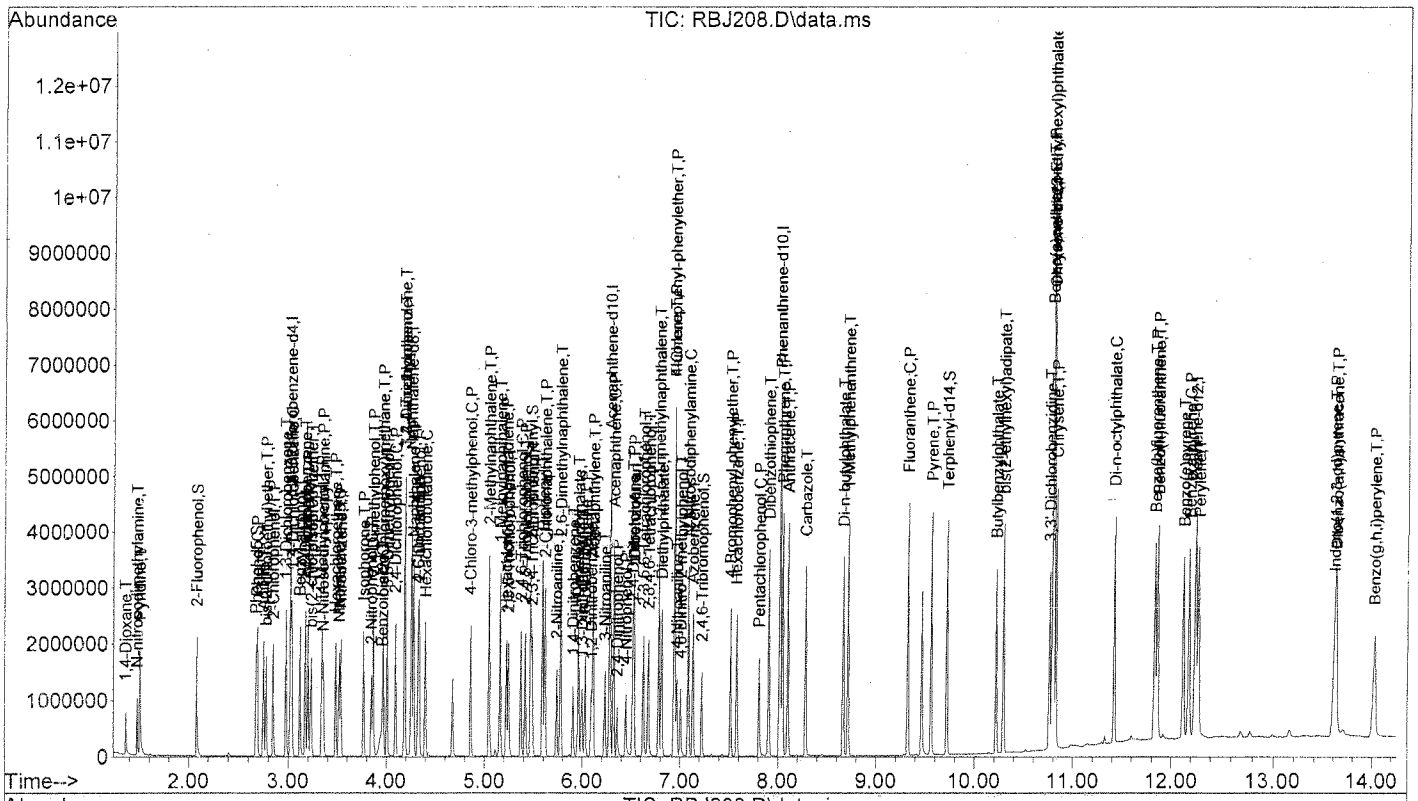
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	12.183	252	1520565	24.10	ppm	96
103) Perylene	12.280	252	1469253	23.21	ppm	96
104) Indeno(1,2,3-cd)pyrene	13.616	276	1726853	24.72	ppm	95
105) Dibenzo(a,h)anthracene	13.636	278	1442185	24.78	ppm	96
106) Benzo(g,h,i)perylene	14.028	276	1437608	23.94	ppm	96

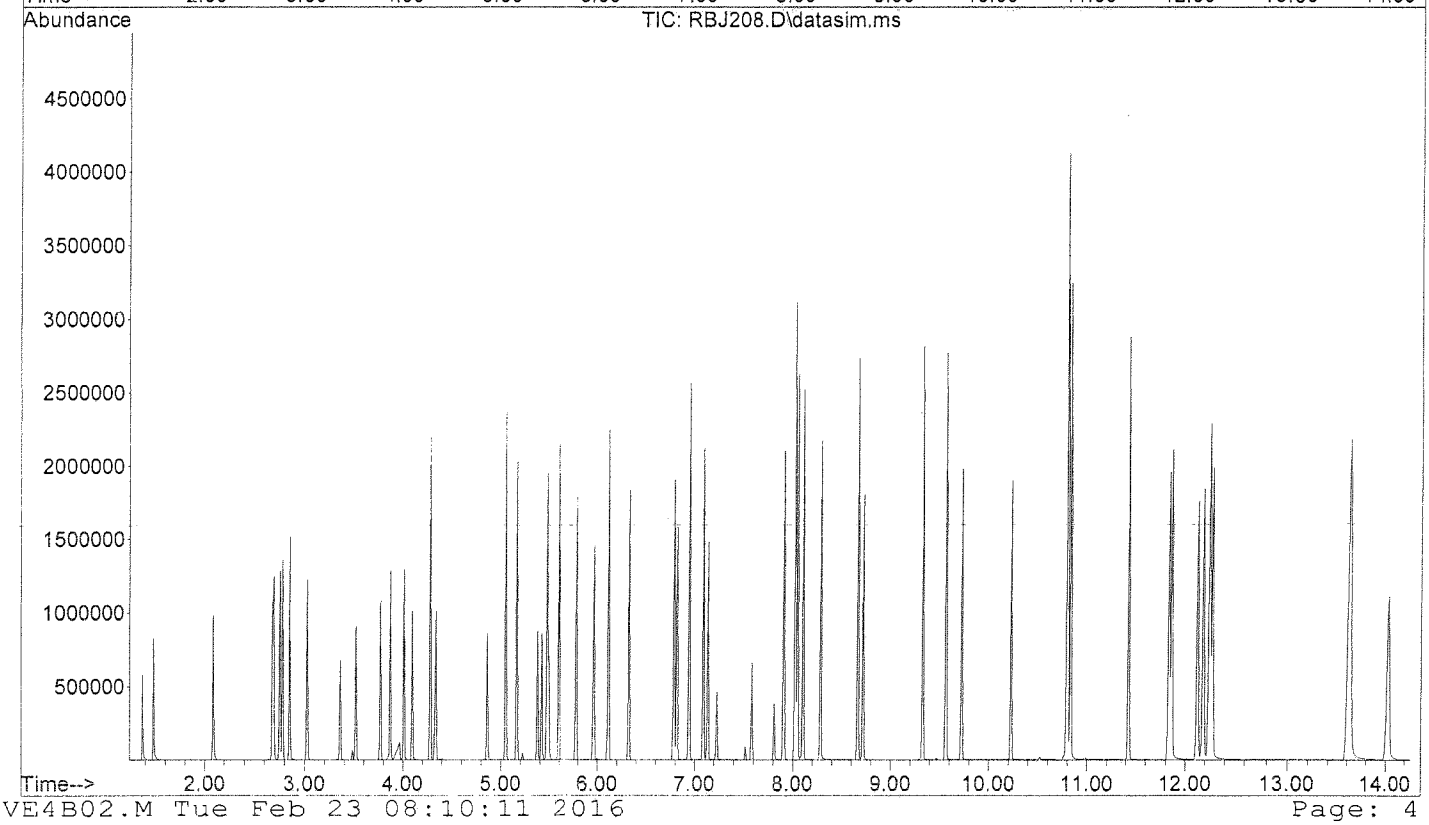
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\16B22\RBJ208.D
Acq On : 22 Feb 2016 10:01
Sample : CSVE4B0209
Misc :
Integrator: RTE
Quant Time: Feb 22 10:14:15 2016
Quant Results File: SVE4B02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4B02.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Feb 02 13:41:58 2016
Response via : Initial Calibration
DataAcq Meth:SVE4B02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00





ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AE4-019

Method File: SVE4B02S Tune File: DFTPP Start Date/Time: 2/2/16 8:58 End Date/Time: 2/2/16 18:46

ANALYTICAL BATCH: SVE4B02S

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RBJ001	IBE4B0201	1			
	2	DFTE4B0201	1			
	3	SVE4B021	1			100 ppm 8270
	4	2				80
	5	3				50
	6	4				40
	7	5				25
	8	6				20
	9	7				10
	10	8				4
	11	9				2
	12	10				0.5
	13	11				0.15
	14	12				0.075
	15	13				0.05
	16	ISVE4B021				ICV *
	17	SVE4B02A1	1			100 ppm Ben
	18	2				80
	19	3				50
	20	4				40
	21	5				25
	22	6				10
	23	7				4
	24	ISVE4B02A1				ICV
	25	SVE4B02C1	1			140 ppm Add
	26	2				120
	27	3				100
	28	4				80
	29	5				50
	30	6				40
	31	7				20
	32	ISVE4B02C1				ICV

Instrument No:	E4
INITIAL CALIBRATION REFERENCE	
Date	2/2/16
ICAL ID	SVE4B02/02A/02C/02S

Standards

Name	ID	Conc. (mg/L)
DFTPP	SS2C-14-17-03	50
INT. STD.	SS2B-12-12-03	2000
ICV 8270	SS2C-14-17-02	25
DCC /ICAL	SS2C-14-16-01	.05-50
BENZIDINE ICAL	SS2C-14-16-02	4-100
APP 9 Add ICV	SS2C-14-21-01	50
APP 9 ADD ICAL	SS2C-14-20-03	20-140
8270 ICAL	SS2C-14-16-03	80-100
Ben ICV	SS2C-14-17-01	25
Solvent	ID	
CH_2Cl_2	55219	
DATA FILE	16B02	

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE4	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments: * 2,4-Dinitrophenol low

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. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AE4-019

Method File: SVE4B02S Tune File: DFTPP Start Date/Time: 2/2/16 8:58 End Date/Time: 2/2/16 18:46

ANALYTICAL BATCH: SVE4B02S

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RBJ 033	ISVE4B022	1			ICV 8270
	~~034~~					
		KV 2/3/16				

Instrument No:	E4
INITIAL CALIBRATION REFERENCE	
Date	2/2/16
ICAL ID	SVE4B02/02S
Standards	
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.		
ICV 8270	SS2C-14-17-02	25
DCC		
BENZIDINE		
APP 9		
APP 9 ADD		
Solvent	ID	
CH_2Cl_2	55219	
DATA FILE	16B02	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOE4		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

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. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE4-019

Method File: SVE4B02S Tune File: DFTPP Start Date/Time: 2/22/16 9:31 End Date/Time: 2/22/16 15:51

ANALYTICAL BATCH: CSVE4B0209

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RBJ205	IBE4B0209				
	207	CSV DFTE4B0209				KV 2/22/16
	208	CSVE4B0209				
	209	CSVE4B02A09				Ben
SVB01XW	210	SVB018WB	1		X	
	211	WL				
	212	WC				
	213	TXB005SB				
	214	16B121-01				
	215	16B094-02				
	216	16B113-02				
	217	03				
	218	16B116-02				
	219	16B123-04	5			Bad yellow Solution
	220	16B094-03	5			
SVB0205	221	SVB020SB	1	X		
	222	SL				
	223	SC				
	224	16B145-05				
	225	16B146-05				
	226	CSVE4B0210				
						KV 2/23/16

Instrument No:	E4
INITIAL CALIBRATION REFERENCE	
Date	2/2/16
ICAL ID	SVE4B02/02A/02S
Standards	
Name	ID / Conc. (mg/L)
DFTPP	SS2C-14-17-03 / 50
INT. STD.	SS2B-12-12-03 / 2000
ICV	
DCC	SS2C-14-20-01 / 25
BENZIDINE	02
APP 9	
APP 9 ADD	
Solvent	ID
CH_2Cl_2	SS219
DATA FILE	16B22
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE4	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 2/23/16

Disposed By: KV

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.

☑ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

2/19/16 JM

Book #: ESV-089
Preparation Batch: SVB018 W
Matrix: WATER / TCLP EXTRACT
Micropipette ID: 200µl: PE97 A-01
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2A-13-01-13	0.4
LCS/MS ~~full list~~ #	SS2A-13-01-14	0.2
LCS/MS 3 comp Δ	SS2B-12-15-02	0.2
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	151090508
Na_2SO_4	VWB-003-07-21
H_2SO_4	313122
NaOH	SP1B-08-52-02
Silica Sand	
Silica Gel	
Reagent Water	VWB-005-16-02
Residual Chlorine Strip	5190
pH Strip	HC573149
Filter Paper	968S320B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVB018WB			1
WL	#Δ		1
WC	#Δ		1
B121-01			5
TXB005SB			1
B094-02			1
-03			3
B113-02			2
-03			2
B116-02			2
B123-04			3

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4		
5	35	35
6		
8		

Thermometer ID = SVOC-T1

Prepared By: JM Witnessed By: TW
Standard Added By: JM Checked By: ML
Extract Received By: KV 2/19/16 Location: PE01-11
Disposed By: Disposed On:

FileID: SVB018W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVB018W01	SVB018WB	1000	ml	2/17/16 14:55	2	1000	2	1	
16SVB018W02	SVB018WL	1000	ml	2/17/16 14:55	2	1000	2	1	FULL LIST + 3COMP
16SVB018W03	SVB018WC	1000	ml	2/17/16 14:55	2	1000	2	1	FULL LIST + 3COMP
16SVB018W04	B121-01	1000	ml	2/17/16 14:55	2	1000	2	1	Sparkletts QC water((SW1A-005-16-12)
16SVB018W05	TXB005SB	100	ml	2/17/16 14:55	2	1000	2	10	TCLP EXTRACT
16SVB018W06	B094-02	100	ml	2/17/16 14:56	2	1000	2	10	TCLP EXTRACT
16SVB018W07	B094-03	850	ml	2/17/16 14:56	2	1000	2	1.18	milky light yellow w/ bubbles,Ph9,brown
16SVB018W08	B113-02	940	ml	2/17/16 14:56	2	1000	2	1.06	light yellow
16SVB018W09	B113-03	930	ml	2/17/16 14:56	2	1000	2	1.08	
16SVB018W10	B116-02	860	ml	2/17/16 14:56	2	1000	2	1.16	yellow
16SVB018W11	B123-04	1000	ml	2/17/16 14:56	2	1000	2	1	dirty brown,stinky

Ve=extract volume PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 2/17/16 14:30 ☑ pHAdj(≤2) @ 2/17/16 14:30 Prepared By: JMuert

☑ Extraction Ended @ 2/19/16 8:00 ☑ pHAdj(≥11) @ 2/18/16 13:56 Checked By: ML

Comments: volume entered after extraction started,cl not detected,pH 5-9. Date 2/19/16

SOP EMAX-3520 Rev. 5

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	TCLPSoln	TCLPVol	Exrtract pH	Preservation	Comments
16TXB005S01	TXB005SB	0	g	2/16/16 14:34		2000		HNO_3	
16TXB005S02	A134-01	100	g	2/16/16 14:41	#1	2000	5.06	HNO_3	for Cr only
16TXB005S03	A134-02	100.03	g	2/16/16 14:43	#1	2000	5.05	HNO_3	for Cr, Pb
16TXB005S04	A134-03	100	g	2/16/16 14:46	#1	2000	5.26	HNO_3	for Pb only
16TXB005S05	A206-01	100	g	2/16/16 14:48	#1	2000	5.79	HNO_3	for Pb only
16TXB005S06	B094-02	100.01	g	2/16/16 14:50	#1	2000	5.08	HNO_3	for 8270, 8151, 8081, Metals, & Hg... (UNPRESERVED)
16TXB005S07	B498-01	90	g	2/16/16 14:53	#1	1800	4.84	HNO_3	7 elements + Hg

☑ DateTimeStarted 2/16/2016 17:30 ☑ Thermometer Reset on 2/16/2016 17:30 Balance ID: 10203192. Calibration check was verified prior to use.

☑ DateTimeEnded 2/17/2016 11:30 Note: Sample preserved with HNO_3 is for metals analysis. MS/MSD were spiked prio Prepared By: DFelic

Extract Location: Metals Received By: SP Checked By: ML

Comment: 02/17/16 Date 2/17/16

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

Determination of TLCP Solution							Determination of TCLP Extract Filtration			Determination of % solids for aqueos phase			
LabSampleID	Phase(s)	Aliquot	Sample pH	HCl	pH	TCLPSolnReq'd	(ml)	(g)	Pressure	WtS(g)	WtF(g)	WtDFS(g)	% Solids
TXB005SB							100						
A134-01	1	5.01	8.54	3.5	1.45	#1	100	97.71	Vacuum				
A134-02	1	5	8.08	3.5	1.42	#1	100	98.59	Vacuum				
A134-03	1	5.02	8.17	3.5	1.47	#1	100	98.83	Vacuum				
A206-01	1	5	8.23	3.5	1.53	#1	100	98.56	Vacuum				
B094-02	1	5.01	8.83	3.5	1.46	#1	100	98.40	Vacuum				
B498-01	1	5.02	5.63	3.5	1.53	#1	100	97.36	Vacuum				

Calibration of pH Meter		InstrumentID:	96
BufferID	Value	Reading	DateTime
SW1-01-780	4	4.01	2/16/16 17:18
SW1-01-794	7	7	2/16/16 17:17
SW1A-005-12-24	CalVer 5	5.03	2/16/16 17:19
SW1-01-780	4	4.01	2/17/16 15:58
SW1-01-794	7	7	2/17/16 15:56
SW1A-005-12-24	CalVer 5	5.03	2/17/16 15:59
ID	Reagent	Desc	Expiration Date
SP1A-07-01-08	HCl	1N	04/01/17
SW1A-005-14-09	HNO_3	Conc	04/29/17
SP1B-08-54-04	TCLP Soln	#1	08/09/16
SP1B-08-56-02	TCLP Soln	#1	08/16/16
Rotary Agitator #	Criteria	rpm	DateTime
1	30 ± 2 rpm	30	2/16/16 17:20
	30 ± 2 rpm		
Thermostat Setting:	73 F /23 C	Thermometer ID:	122273404
TCLP Room Temperature	Criteria	Rdg	DateTime
Room Temp (°C) High	23 ± 2 °C	23.4	2/17/16 9:20
Room Temp (°C) Low	23 ± 2 °C	21.9	2/17/16 0:13
Pipette ID	PE00-01		
CONCENTRATOR (WATER BATH)			
Concentrator #	Temp Setting	Thermometer Rdg	Thermometer ID
5	50	50	SVOC-T1
Filter ID/Lot #	103013/062513		
pH strip Lot#	HC554612		

Legend:

WtS = weight of sample

WtF = weight of filter

WtDFS = weight of dried filter + solids

Prepared By: DFelic

Checked By: ML

Date 2/17/16

PESTICIDES

METHOD SW3520C/8081B
PESTICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/19/16 23:44
Lab Samp ID:	B094-03	Dilution Factor:	0.99
Lab File ID:	RB19035A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

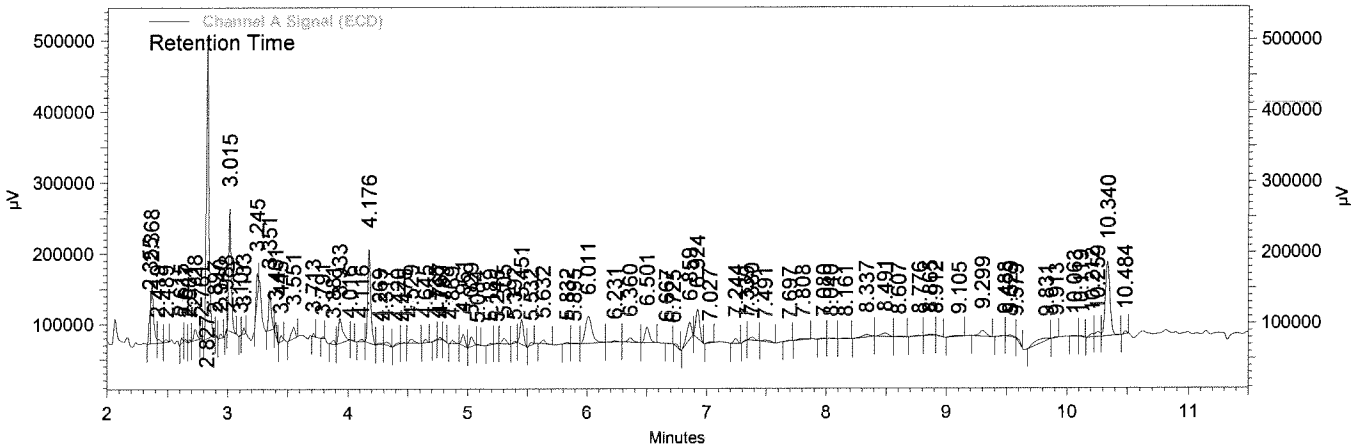
PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)|0.028J	0.099	0.0049	0.0099
HEPTACHLOR	(ND)|ND	0.099	0.0069	0.0099
HEPTACHLOR EPOXIDE	(ND)|0.013J	0.099	0.0049	0.0099
GAMMA-CHLORDANE	(ND)|ND	0.099	0.0049	0.0099
ALPHA-CHLORDANE	(ND)|ND	0.099	0.0049	0.0099
ENDRIN	(ND)|ND	0.099	0.0079	0.0099
METHOXYCHLOR	(ND)|ND	0.99	0.050	0.099
TOXAPHENE	(ND)|ND	2.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.3430)|0.3897	0.4000	(85.8)|97.4	25-140
DECACHLOROBIPHENYL	(0.2661)|0.3351	0.4000	(66.5)|83.8	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: B094-03
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19035.dat
User: ESanto
Acquired: 02/19/16 23:44:51
Printed: 02/22/16 14:53:47

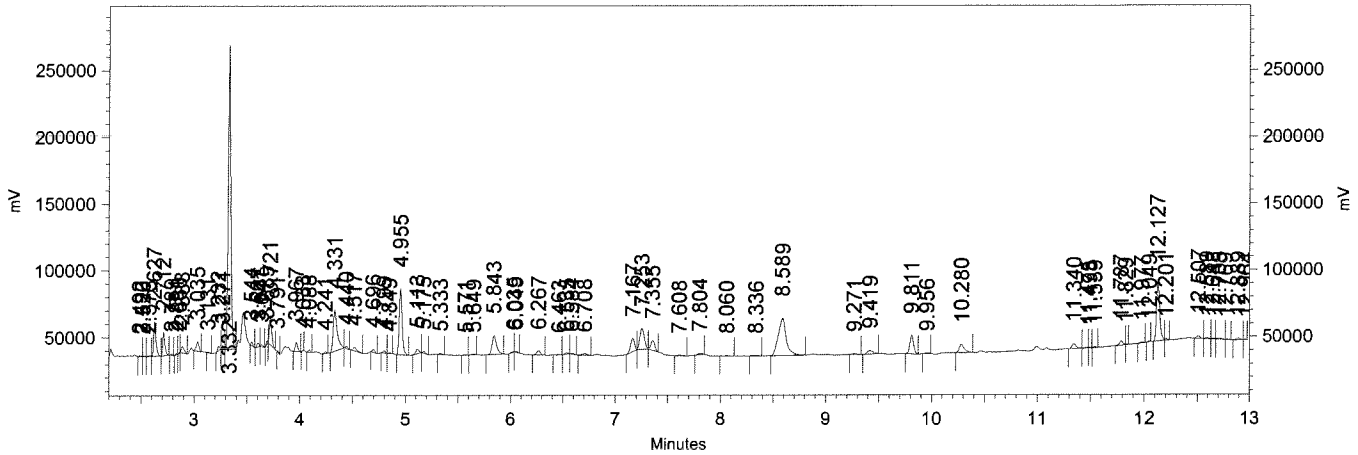


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.368	7290186	210406.3	34.648	SS
alpha-BHC	2.683	2.681	205270	332088.1	0.618	vv
gamma-BHC	2.867				0.000 BDL	
beta-BHC	2.916				0.000 BDL	
delta-BHC	3.023	3.015	12970893	355796.5	36.456	vv
Heptachlor	3.148				0.000 BDL	
Aldrin	3.345	3.351	4595881	354684.2	12.958	vv
Heptachlor Epoxide	3.803	3.791	159912	359106.5	0.445	vv
gamma-Chlordane	3.908				0.000 BDL	
alpha-Chlordane	4.029	4.016	50204	394418.4	0.127	vv
DDE	4.099	4.116	361525	343789.3	1.052	vv
Endosulfan I	4.163	4.176	12464343	419333.4	29.724	vv
Dieldrin	4.412	4.420	322959	357645.0	0.903	vv
Endrin	4.684				0.000 BDL	
DDD	4.776	4.767	250684	268752.2	0.933	vv
Endosulfan II	4.976	4.961	1746349	367000.6	4.758	vv
DDT	5.169				0.000 BDL	
Endrin aldehyde	5.628	5.632	631640	326603.1	1.934	vv
Methoxychlor	6.065				0.000 BDL	
Endosulfan Sulfate	6.480	6.501	3180335	409015.5	7.776	vv
Endrin Ketone	7.123				0.000 BDL	
DCB	10.328	10.340	15263677	567820.8	26.881	VB

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: B094-03
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19035.dat
User: ESanto
Acquired: 02/19/16 23:44:51
Printed: 02/22/16 14:53:47



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.627	2113953	53703.4	39.363	VB
alpha-BHC	3.000				0.000 BDL	
gamma-BHC	3.233	3.232	222499	79373.3	2.803	vv
beta-BHC	3.283	3.271	181643	51602.9	3.520	vv
delta-BHC	3.505				0.000 BDL	
Heptachlor	3.567				0.000 BDL	
Aldrin	3.849				0.000 BDL	
Heptachlor Epoxide	4.433	4.440	127770	97064.9	1.316	vv
gamma-Chlordane	4.664				0.000 BDL	
alpha-Chlordane	4.861	4.849	37219	101533.5	0.367	vv
Endosulfan I	4.951	4.955	5166846	105819.2	48.827	vv
DDE	5.093				0.000 BDL	
Dieldrin	5.375				0.000 BDL	
Endrin	5.929				0.000 BDL	
DDD	6.172				0.000 BDL	
Endosulfan II	6.379				0.000 BDL	
DDT	6.931				0.000 BDL	
Endrin Aldehyde	7.229				0.000 BDL	
Endosulfan Sulfate	8.071	8.060	40906	111570.2	0.367	vv
Methoxychlor	9.343				0.000 BDL	
Endrin Ketone	9.807	9.811	1819677	123295.7	14.759	vv
DCB	12.123	12.127	4937528	145864.8	33.850	BV

QC SUMMARIES

METHOD SW3520C/8081B
PESTICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	MBLK1W	Date Analyzed:	02/19/16 22:02
Lab Samp ID:	CPB025WB	Dilution Factor:	1
Lab File ID:	RB19030A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)|ND	0.10	0.0050	0.010
HEPTACHLOR	(ND)|ND	0.10	0.0070	0.010
HEPTACHLOR EPOXIDE	(ND)|ND	0.10	0.0050	0.010
GAMMA-CHLORDANE	(ND)|ND	0.10	0.0050	0.010
ALPHA-CHLORDANE	(ND)|ND	0.10	0.0050	0.010
ENDRIN	(ND)|ND	0.10	0.0080	0.010
METHOXYCHLOR	(ND)|ND	1.0	0.050	0.10
TOXAPHENE	(ND)|ND	2.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.2941)|0.3537	0.4000	(73.5)|88.4	25-140
DECACHLOROBIPHENYL	(0.3017)|0.3451	0.4000	(75.4)|86.3	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW3520C/8081B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	CPB025WB	CPB025WL	CPB025WC		
LAB FILE ID:	RB19030A	RB19031A	RB19032A		
DATE EXTRACTED:	02/17/1612:45	02/17/1612:45	02/17/1612:45	DATE COLLECTED:	NA
DATE ANALYZED:	02/19/1622:02	02/19/1622:23	02/19/1622:43	DATE RECEIVED:	02/17/16
PREP. BATCH:	CPB025W	CPB025W	CPB025W		
CALIB. REF:	RB19028A	RB19028A	RB19028A		

ACCESSION:

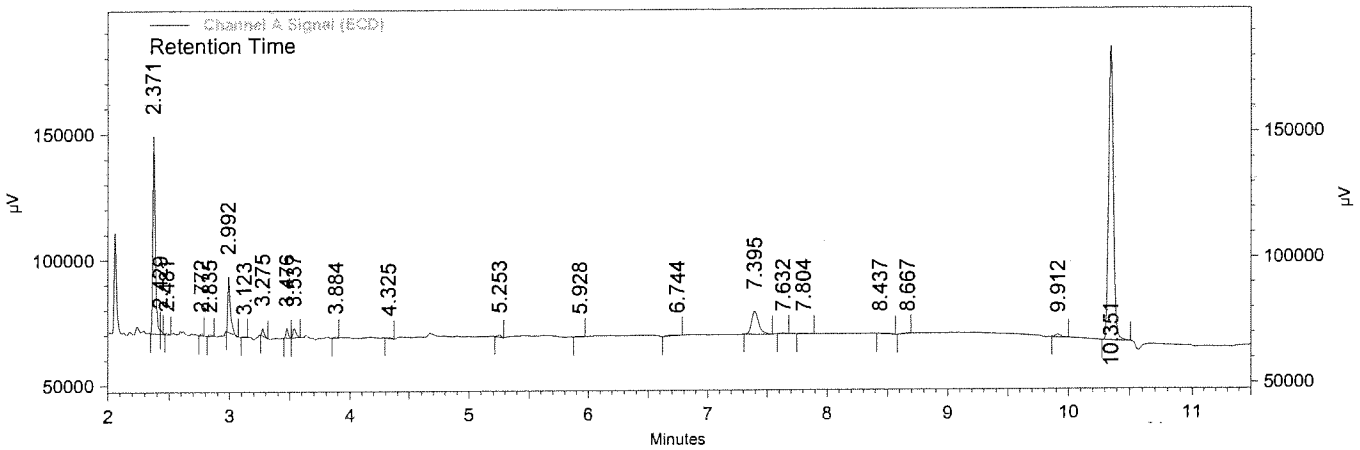
PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
gamma-BHC (Lindane)	(ND)|ND	0.200	(0.155)|0.187	(78)|94	0.200	(0.171)|0.192	(86)|96	(10)|3	25-135	30
Heptachlor	(ND)|ND	0.200	(0.155)|0.183	(78)|92	0.200	(0.167)|0.202	(84)|101	(7)|10	40-130	30
Heptachlor Epoxide	(ND)|ND	0.200	(0.163)|0.187	(82)|94	0.200	(0.179)|0.204	(90)|102	(9)|9	60-130	30
gamma-Chlordane	(ND)|ND	0.200	(0.158)|0.188	(79)|94	0.200	(0.173)|0.226	(86)|113	(9)|18	60-125	30
alpha-Chlordane	(ND)|ND	0.200	(0.155)|0.190	(78)|95	0.200	(0.167)|0.206	(84)|103	(7)|8	65-125	30
Endrin	(ND)|ND	0.200	(0.183)|0.203	(92)|101	0.200	(0.199)|0.212	(100)|106	(8)|4	55-135	30
Methoxychlor	(ND)|ND	2.00	(1.90)|2.28	(95)|114	2.00	(2.05)|2.45	(102)|122	(8)|7	55-150	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 (%)
Tetrachloro-m-xylene	0.4000	(0.3074)|0.3629	(76.9)|90.7	0.4000	(0.3229)|0.3903	(80.7)|97.6	25-140
Decachlorobiphenyl	0.4000	(0.3315)|0.3709	(82.9)|92.7	0.4000	(0.3379)|0.3831	(84.5)|95.8	30-135

QC DATA

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WB
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19030.dat
User: ESanto
Acquired: 02/19/16 22:02:57
Printed: 02/22/16 14:39:37

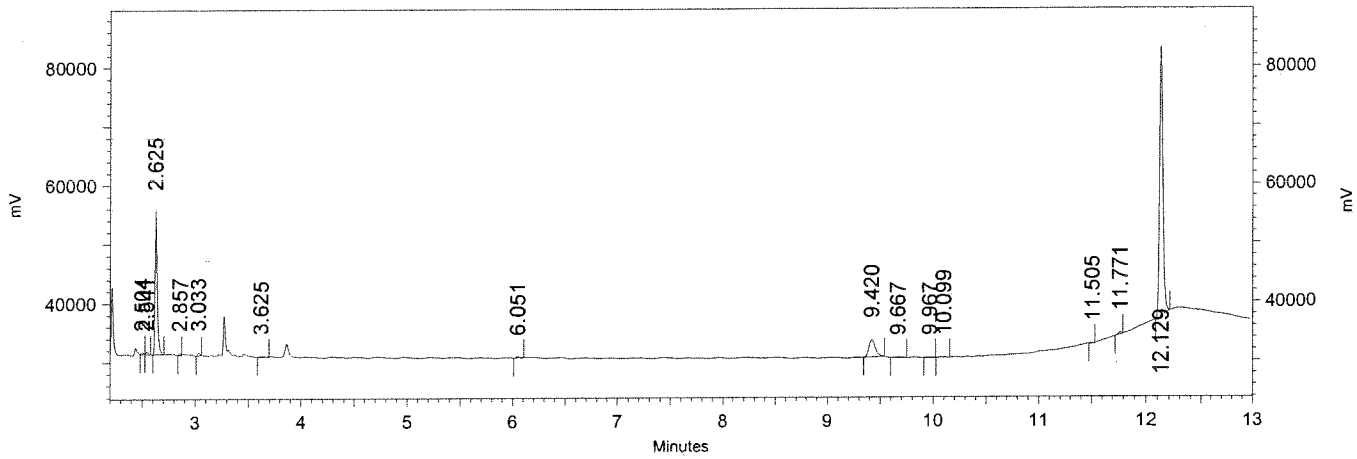


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.371	6188744	210406.3	29.413	SS
alpha-BHC	2.683				0.000 BDL	
gamma-BHC	2.867				0.000 BDL	
beta-BHC	2.916				0.000 BDL	
delta-BHC	3.023				0.000 BDL	
Heptachlor	3.148				0.000 BDL	
Aldrin	3.345				0.000 BDL	
Heptachlor Epoxide	3.803				0.000 BDL	
gamma-Chlordane	3.908				0.000 BDL	
alpha-Chlordane	4.029				0.000 BDL	
DDE	4.099				0.000 BDL	
Endosulfan I	4.163				0.000 BDL	
Dieldrin	4.412				0.000 BDL	
Endrin	4.684				0.000 BDL	
DDD	4.776				0.000 BDL	
Endosulfan II	4.976				0.000 BDL	
DDT	5.169				0.000 BDL	
Endrin aldehyde	5.628				0.000 BDL	
Methoxychlor	6.065				0.000 BDL	
Endosulfan Sulfate	6.480				0.000 BDL	
Endrin Ketone	7.123				0.000 BDL	
DCB	10.328	10.351	17131916	567820.8	30.171	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WB
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19030.dat
User: ESanto
Acquired: 02/19/16 22:02:57
Printed: 02/22/16 14:39:37

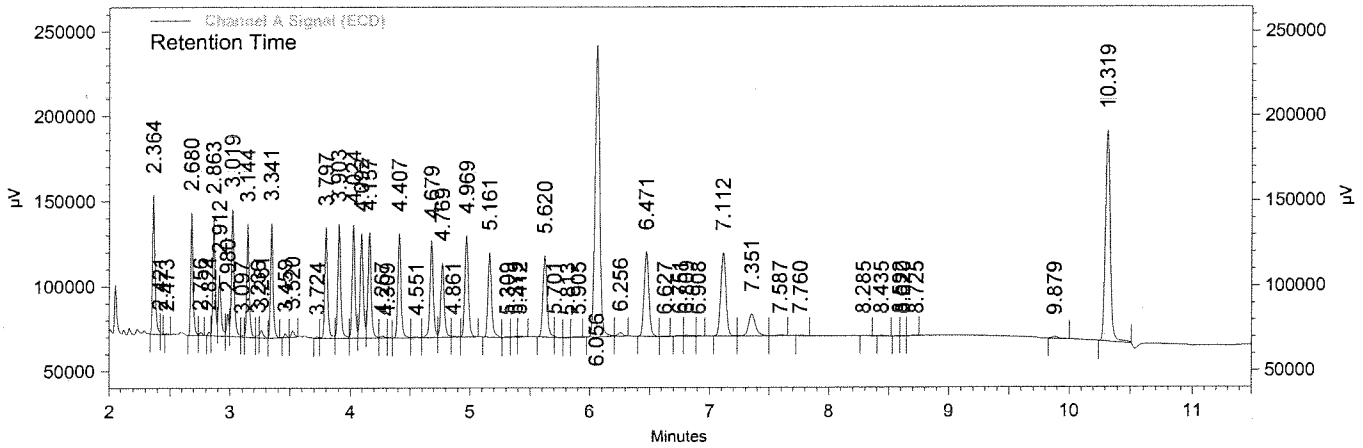


Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.625	1899726	53703.4	35.374	SB
alpha-BHC	3.000				0.000 BDL	
gamma-BHC	3.233				0.000 BDL	
beta-BHC	3.283				0.000 BDL	
delta-BHC	3.505				0.000 BDL	
Heptachlor	3.567				0.000 BDL	
Aldrin	3.849				0.000 BDL	
Heptachlor Epoxide	4.433				0.000 BDL	
gamma-Chlordane	4.664				0.000 BDL	
alpha-Chlordane	4.861				0.000 BDL	
Endosulfan I	4.951				0.000 BDL	
DDE	5.093				0.000 BDL	
Dieldrin	5.375				0.000 BDL	
Endrin	5.929				0.000 BDL	
DDD	6.172				0.000 BDL	
Endosulfan II	6.379				0.000 BDL	
DDT	6.931				0.000 BDL	
Endrin Aldehyde	7.229				0.000 BDL	
Endosulfan Sulfate	8.071				0.000 BDL	
Methoxychlor	9.343				0.000 BDL	
Endrin Ketone	9.807				0.000 BDL	
DCB	12.123	12.129	5034094	145864.8	34.512	SB

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WL
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19031.dat
User: ESanto
Acquired: 02/19/16 22:23:22
Printed: 02/22/16 14:58:53

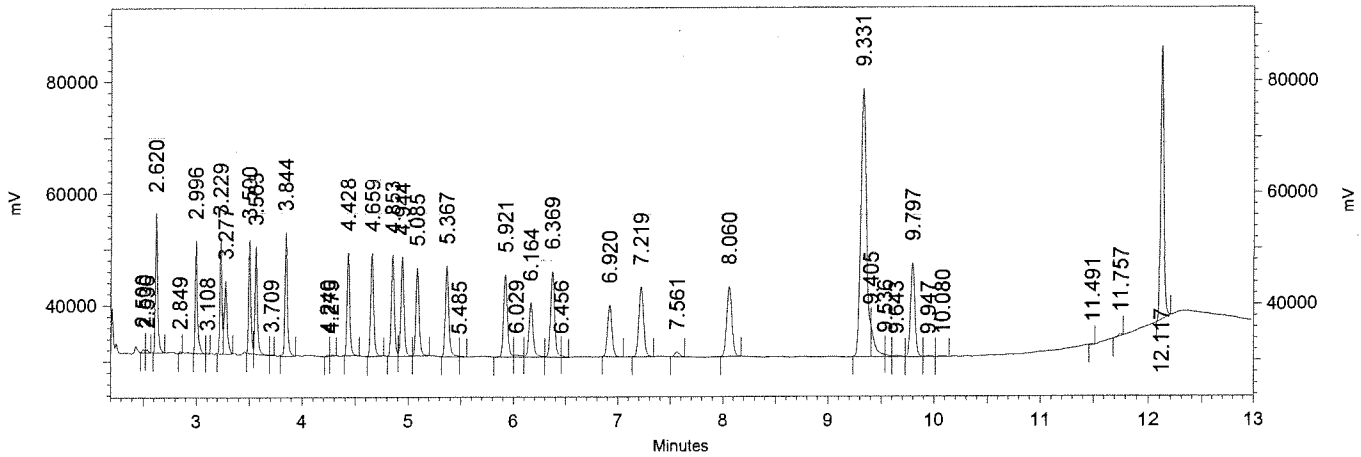


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.364	6468387	210406.3	30.742	BS
alpha-BHC	2.683	2.680	5218320	332088.1	15.714	BV
gamma-BHC	2.867	2.863	5072134	327031.5	15.510	VV
beta-BHC	2.916	2.912	3096209	191799.2	16.143	VV
delta-BHC	3.023	3.019	6026585	355796.5	16.938	VV
Heptachlor	3.148	3.144	5289983	340376.6	15.542	VV
Aldrin	3.345	3.341	5342236	354684.2	15.062	BV
Heptachlor Epoxide	3.803	3.797	5853346	359106.5	16.300	SV
gamma-Chlordane	3.908	3.903	6212537	392256.3	15.838	VV
alpha-Chlordane	4.029	4.024	6119934	394418.4	15.516	VV
DDE	4.099	4.092	5866184	343789.3	17.063	VV
Endosulfan I	4.163	4.157	6124602	419333.4	14.606	VV
Dieldrin	4.412	4.407	6171763	357645.0	17.257	BV
Endrin	4.684	4.679	6280528	343628.3	18.277	VV
DDD	4.776	4.769	4812744	268752.2	17.908	VS
Endosulfan II	4.976	4.969	6689750	367000.6	18.228	VS
DDT	5.169	5.161	5936760	312997.5	18.967	BB
Endrin aldehyde	5.628	5.620	6333653	326603.1	19.393	BS
Methoxychlor	6.065	6.056	25703245	164669.2	189.918	SV
Endosulfan Sulfate	6.480	6.471	7501129	409015.5	18.339	BB
Endrin Ketone	7.123	7.112	8130576	446868.0	18.195	BV
DCB	10.328	10.319	18821539	567820.8	33.147	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WL
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19031.dat
User: ESanto
Acquired: 02/19/16 22:23:22
Printed: 02/22/16 14:58:53

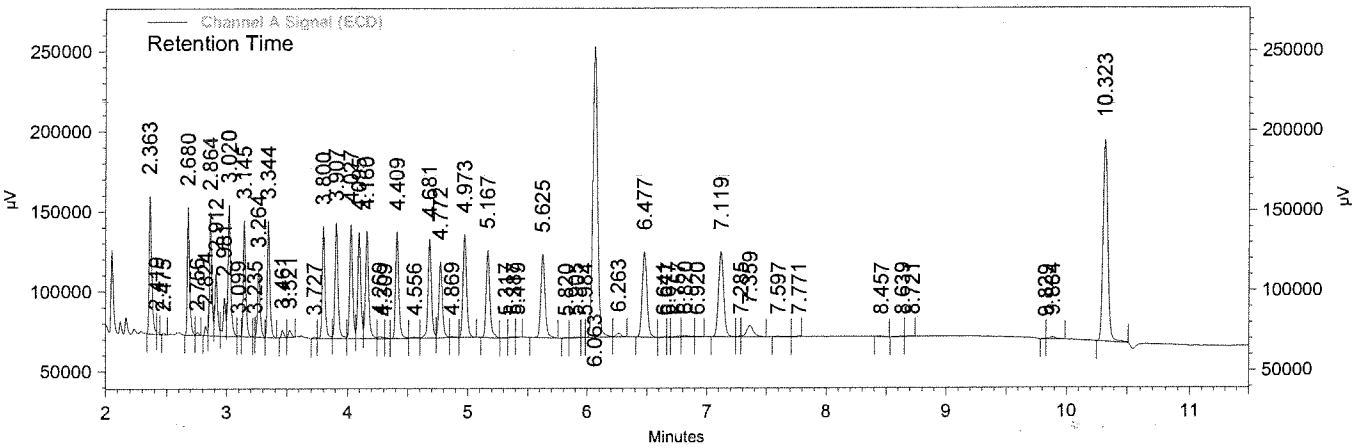


Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.620	1948972	53703.4	36.291	SS
alpha-BHC	3.000	2.996	1530152	72036.4	21.241	IV
gamma-BHC	3.233	3.229	1485935	79373.3	18.721	SV
beta-BHC	3.283	3.277	1314130	51602.9	25.466	VI
delta-BHC	3.505	3.500	1568104	77332.0	20.278	BV
Heptachlor	3.567	3.563	1605993	87869.0	18.277	VV
Aldrin	3.849	3.844	2032327	103752.3	19.588	SS
Heptachlor Epoxide	4.433	4.428	1818853	97064.9	18.739	SS
gamma-Chlordane	4.664	4.659	1931254	102558.3	18.831	BB
alpha-Chlordane	4.861	4.853	1928568	101533.5	18.994	BV
Endosulfan I	4.951	4.944	1954821	105819.2	18.473	VB
DDE	5.093	5.085	1814037	95539.7	18.987	BS
Dieldrin	5.375	5.367	1978540	99969.4	19.791	BS
Endrin	5.929	5.921	2017383	99144.3	20.348	SV
DDD	6.172	6.164	1490238	66411.8	22.439	VV
Endosulfan II	6.379	6.369	2286423	103675.6	22.054	VS
DDT	6.931	6.920	1457598	74582.2	19.544	BB
Endrin Aldehyde	7.229	7.219	2128812	96524.7	22.055	SB
Endosulfan Sulfate	8.071	8.060	2358223	111570.2	21.137	BS
Methoxychlor	9.343	9.331	9690990	45652.3	228.463	BS
Endrin Ketone	9.807	9.797	2647556	123295.7	21.473	BV
DCB	12.123	12.117	5410540	145864.8	37.093	IB

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WC
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19032.dat
User: ESanto
Acquired: 02/19/16 22:43:43
Printed: 02/22/16 14:46:56

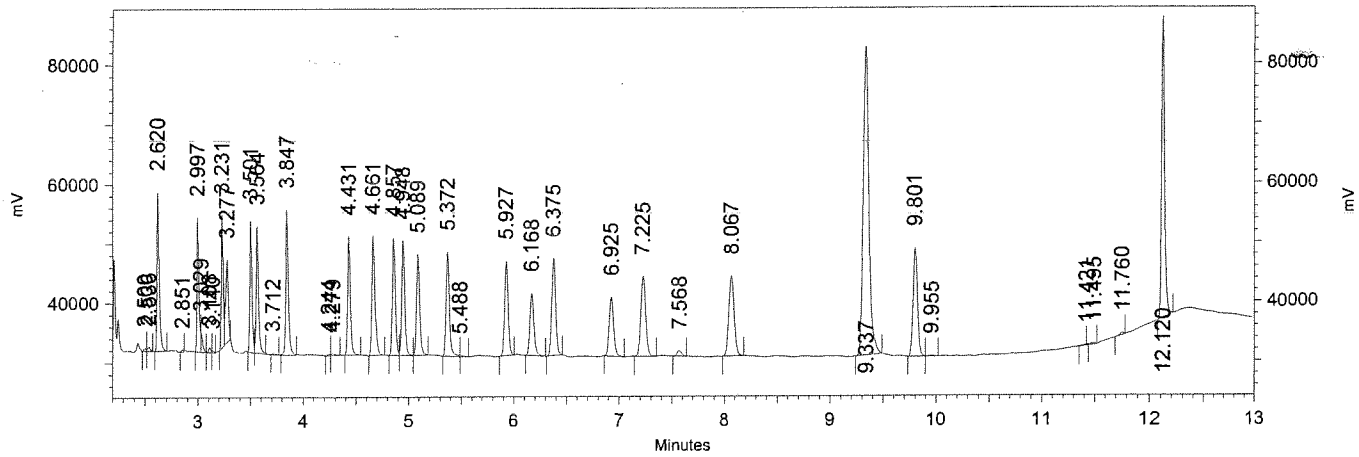


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.363	6793235	210406.3	32.286	BS
alpha-BHC	2.683	2.680	5800171	332088.1	17.466	BV
gamma-BHC	2.867	2.864	5576264	327031.5	17.051	VV
beta-BHC	2.916	2.912	3313749	191799.2	17.277	VS
delta-BHC	3.023	3.020	6647904	355796.5	18.685	VV
Heptachlor	3.148	3.145	5695866	340376.6	16.734	VV
Aldrin	3.345	3.344	5752426	354684.2	16.218	BB
Heptachlor Epoxide	3.803	3.800	6422191	359106.5	17.884	SV
gamma-Chlordane	3.908	3.907	6784614	392256.3	17.296	VV
alpha-Chlordane	4.029	4.027	6592065	394418.4	16.713	VV
DDE	4.099	4.095	6369338	343789.3	18.527	VV
Endosulfan I	4.163	4.160	6703156	419333.4	15.985	VV
Dieldrin	4.412	4.409	6764596	357645.0	18.914	BV
Endrin	4.684	4.681	6835223	343628.3	19.891	VV
DDD	4.776	4.772	5269635	268752.2	19.608	VV
Endosulfan II	4.976	4.973	7269958	367000.6	19.809	VS
DDT	5.169	5.167	6538766	312997.5	20.891	BB
Endrin aldehyde	5.628	5.625	6970658	326603.1	21.343	SS
Methoxychlor	6.065	6.063	27534486	164669.2	204.964	SV
Endosulfan Sulfate	6.480	6.477	8113620	409015.5	19.837	BB
Endrin Ketone	7.123	7.119	8822287	446868.0	19.742	BV
DCB	10.328	10.323	19184256	567820.8	33.786	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WC
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19032.dat
User: ESanto
Acquired: 02/19/16 22:43:43
Printed: 02/22/16 14:46:56



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.620	2096255	53703.4	39.034	SS
alpha-BHC	3.000	2.997	1624347	72036.4	22.549	IS
gamma-BHC	3.233	3.231	1521001	79373.3	19.163	SV
beta-BHC	3.283	3.277	1280163	51602.9	24.808	VI
delta-BHC	3.505	3.501	1725399	77332.0	22.312	BV
Heptachlor	3.567	3.564	1772688	87869.0	20.174	VS
Aldrin	3.849	3.847	2302025	103752.3	22.188	SS
Heptachlor Epoxide	4.433	4.431	1975255	97064.9	20.350	SS
gamma-Chlordane	4.664	4.661	2315733	102558.3	22.580	BB
alpha-Chlordane	4.861	4.857	2095417	101533.5	20.638	BV
Endosulfan I	4.951	4.948	2131961	105819.2	20.147	VB
DDE	5.093	5.089	1990375	95539.7	20.833	BS
Dieldrin	5.375	5.372	2155720	99969.4	21.564	BS
Endrin	5.929	5.927	2106467	99144.3	21.246	SB
DDD	6.172	6.168	1501717	66411.8	22.612	BB
Endosulfan II	6.379	6.375	2359973	103675.6	22.763	BI
DDT	6.931	6.925	1592610	74582.2	21.354	BB
Endrin Aldehyde	7.229	7.225	2313750	96524.7	23.971	SB
Endosulfan Sulfate	8.071	8.067	2543325	111570.2	22.796	BS
Methoxychlor	9.343	9.337	10354138	45652.3	244.625	BI
Endrin Ketone	9.807	9.801	2847792	123295.7	23.097	BV
DCB	12.123	12.120	5587683	145864.8	38.307	SB

INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
LFID & Datetime: RA20017A 01/20/16 21:00 RA20025A 01/20/16 23:42
LFID & Datetime: RA20018A 01/20/16 21:20 RA20026A 01/21/16 00:03
LFID & Datetime: RA20019A 01/20/16 21:40 RA20027A 01/21/16 00:23
LFID & Datetime: RA20020A 01/20/16 22:01 RA20028A 01/21/16 00:44
LFID & Datetime: RA20021A 01/20/16 22:21 RA20029A 01/21/16 01:04
LFID & Datetime: RA20022A 01/20/16 22:41 RA20030A 01/21/16 01:25
LFID & Datetime: RA20023A 01/20/16 23:01 RA20031A 01/21/16 01:45
LFID & Datetime: RA20024A 01/20/16 23:22 RA20032A 01/21/16 02:06
CONC UNIT : ppb
Method Name : CPF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
alpha-BHC	1.25	330894	337329	331538	341580	354234	325781	327241	308106	332088.0	4.0
gamma-BHC	1.25	335575	347718	330456	340429	343160	309248	318745	290922	327031.5	5.9
beta-BHC	1.25	197482	215988	201494	200905	199852	177832	178524	162316	191799.2	9.0
delta-BHC	1.25	346330	369550	348034	362808	378696	348935	360330	331690	355796.5	4.2
Heptachlor	1.25	345027	391009	352596	355170	352107	314347	321117	291640	340376.6	9.0
Aldrin	1.25	372859	393493	362179	369419	365195	329439	337690	307200	354684.2	7.8
Heptachlor Epoxide	1.25	380904	403468	375099	377590	376714	334917	327820	296340	359106.5	9.9
gamma-Chlordane	1.25	399430	428843	416996	412734	407768	369689	366651	335939	392256.3	8.1
alpha-Chlordane	1.25	422936	448672	417549	413813	402141	361988	358571	329677	394418.4	10.2
DDE	2.50	345052	377590	353312	357493	356580	326081	327798	306410	343789.3	6.6
Endosulfan I	1.25	421966	482646	467142	458490	431064	382271	372253	338836	419333.4	12.1
Dieldrin	2.50	397148	390877	379798	386255	366324	326542	320367	293850	357644.9	10.8
Endrin	2.50	383767	390570	369527	373556	350513	307930	298938	274226	343628.3	12.8
DDD	2.50	258555	253775	278853	291687	283646	263987	266707	252808	268752.2	5.4
Endosulfan II	2.50	403793	412517	407990	401224	371106	326747	318754	293873	367000.6	12.9
DDT	2.50	299646	348187	326303	330408	319686	295150	299564	285035	312997.5	6.9
Endrin Aldehyde	2.50	363165	369637	368047	355348	329008	286388	280272	260960	326603.0	13.6
Methoxychlor	12.50	185714	190357	177230	164017	146220	124477	0	0	164669.2	15.4
Endosulfan Sulfate	2.50	459079	474519	455628	434761	406765	358517	352778	330078	409015.5	13.6
Endrin Ketone	2.50	487572	500072	487435	479166	451744	404371	395296	369288	446867.9	11.2
Oxychlordane	1.25	409579	395588	378507	356047	334646	306986	283968	263860	341147.6	15.6
2,4'-DDE	1.25	285049	287995	294067	266495	270279	265431	242796	230138	267781.1	8.3
trans-Nonachlor	1.25	588094	536052	511545	493443	468414	438827	405510	384154	478254.9	14.3
2,4'-DDD	1.25	251008	257919	256914	236132	223817	219017	207494	198841	231392.7	9.8
2,4'-DDT	1.25	300907	289844	291096	281583	279225	262732	251993	241417	274849.4	7.6
cis-Nonachlor	1.25	598406	582790	567206	537682	522784	485885	460156	436083	523874.0	11.2
Mirex	1.25	572548	526648	512253	476925	456075	400558	376451	351226	459085.4	17.0

SURROGATE	X	1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
TCX	1.25	205044	215602	227332	225193	225524	192835	201271	190449	210406.3	7.1
DCB	1.25	627516	650358	658420	618656	560693	497771	476722	452431	567820.8	14.5

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INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
LFID & Datetime: RA20017B 01/20/16 21:00 RA20025B 01/20/16 23:42
LFID & Datetime: RA20018B 01/20/16 21:20 RA20026B 01/21/16 00:03
LFID & Datetime: RA20019B 01/20/16 21:40 RA20027B 01/21/16 00:23
LFID & Datetime: RA20020B 01/20/16 22:01 RA20028B 01/21/16 00:44
LFID & Datetime: RA20021B 01/20/16 22:21 RA20029B 01/21/16 01:04
LFID & Datetime: RA20022B 01/20/16 22:41 RA20030B 01/21/16 01:25
LFID & Datetime: RA20023B 01/20/16 23:01 RA20031B 01/21/16 01:45
LFID & Datetime: RA20024B 01/20/16 23:22 RA20032B 01/21/16 02:06
CONC UNIT : ppb
Method Name : CPF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
alpha-BHC	1.25	58567	65443	65790	70244	77211	76274	83363	79398	72036.4	11.7
gamma-BHC	1.25	74810	80681	73726	77372	82236	79199	86072	80889	79373.3	5.1
beta-BHC	1.25	47418	59453	55442	54641	52862	48208	49738	45061	51602.9	9.3
delta-BHC	1.25	65544	71762	68982	74317	82337	80749	89531	85433	77332.0	10.9
Heptachlor	1.25	79078	94458	84739	89839	94992	86537	89867	83441	87869.0	6.2
Aldrin	1.25	123732	118756	99043	99011	100652	94782	100727	93314	103752.3	10.8
Heptachlor Epoxide	1.25	94105	108274	94809	99640	100257	92325	96338	90773	97064.9	5.8
gamma-Chlordane	1.25	98650	113066	100941	103435	105588	98008	102817	97961	102558.3	4.9
alpha-Chlordane	1.25	95341	107688	101036	103798	105076	98174	103220	97935	101533.5	4.1
DDE	2.50	89030	98260	91561	95185	98680	94989	100137	96477	95539.7	3.9
Endosulfan I	1.25	107402	118086	105537	107257	107259	99660	103462	97891	105819.2	5.8
Dieldrin	2.50	99048	106033	97260	99998	102722	96683	101217	96795	99969.4	3.3
Endrin	2.50	104828	107909	99248	101236	101272	92804	95595	90262	99144.3	6.0
DDD	2.50	57878	67922	62570	64633	68191	66478	72250	71372	66411.8	7.1
Endosulfan II	2.50	108087	112773	103608	104646	106296	97565	100397	96033	103675.6	5.4
DDT	2.50	66343	72109	71883	74641	77451	75009	80238	78983	74582.2	6.0
Endrin Aldehyde	2.50	104622	106354	102384	100356	96469	87502	89645	84866	96524.7	8.5
Methoxychlor	12.50	46332	48237	46566	47001	44563	41215	0	0	45652.3	5.4
Endosulfan Sulfate	2.50	113666	120694	115648	116256	113873	104055	106405	101965	111570.2	5.9
Endrin Ketone	2.50	128174	131965	126218	127019	124677	116422	118020	113871	123295.7	5.2
Oxychlordane	1.25	114914	107895	103081	100926	98632	93551	88404	84196	98949.8	10.2
2,4'-DDE	1.25	73000	77349	78380	73531	72825	70879	67758	65119	72355.1	6.2
trans-Nonachlor	1.25	143586	147507	138895	133675	130698	126465	121835	116945	132451.0	8.0
2,4'-DDD	1.25	64763	58215	62206	57914	60491	57757	56534	55205	59135.7	5.3
2,4'-DDT	1.25	51262	57402	61833	63412	65767	65654	65799	64261	61923.8	8.3
cis-Nonachlor	1.25	138121	139592	143440	140243	142101	138948	135024	131267	138591.9	2.8
Mirex	1.25	141764	134472	142655	133207	133076	120128	113130	108361	128349.0	10.1
SURROGATE	**X**	**1.00X**	**2.00X**	**4.00X**	**8.00X**	**16.00X**	**32.00X**	**48.00X**	**64.00X**	**MEAN**	**%RSD**
TCX	1.25	57480	57464	55702	55881	54886	49791	50958	47465	53703.4	7.0
DCB	1.25	147393	156816	192460	158688	140065	128437	124354	118706	145864.8	16.4

AM 01-29-16

INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
LFID & Datetime: RA20017A 01/20/16 21:00 RA20025A 01/20/16 23:42
LFID & Datetime: RA20018A 01/20/16 21:20 RA20026A 01/21/16 00:03
LFID & Datetime: RA20019A 01/20/16 21:40 RA20027A 01/21/16 00:23
LFID & Datetime: RA20020A 01/20/16 22:01 RA20028A 01/21/16 00:44
LFID & Datetime: RA20021A 01/20/16 22:21 RA20029A 01/21/16 01:04
LFID & Datetime: RA20022A 01/20/16 22:41 RA20030A 01/21/16 01:25
LFID & Datetime: RA20023A 01/20/16 23:01 RA20031A 01/21/16 01:45
LFID & Datetime: RA20024A 01/20/16 23:22 RA20032A 01/21/16 02:06
Method Name : CPF9A20.met

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
alpha-BHC	2.695	2.697	2.693	2.691	2.697	2.692	2.695	2.703	2.695	2.675	2.715	0.020
gamma-BHC	2.879	2.881	2.879	2.873	2.883	2.877	2.879	2.888	2.880	2.858	2.902	0.022
beta-BHC	2.929	2.932	2.928	2.923	2.931	2.925	2.927	2.936	2.929	2.907	2.951	0.022
delta-BHC	3.037	3.040	3.036	3.031	3.040	3.033	3.035	3.044	3.037	3.016	3.058	0.021
Heptachlor	3.163	3.167	3.163	3.157	3.167	3.161	3.161	3.171	3.164	3.140	3.188	0.024
Aldrin	3.361	3.365	3.363	3.356	3.367	3.361	3.361	3.371	3.363	3.337	3.389	0.026
Heptachlor Epoxide	3.821	3.827	3.823	3.813	3.828	3.821	3.820	3.831	3.823	3.793	3.853	0.030
gamma-Chlordane	3.929	3.933	3.931	3.921	3.935	3.929	3.928	3.939	3.931	3.899	3.963	0.032
alpha-Chlordane	4.051	4.055	4.053	4.041	4.057	4.051	4.049	4.060	4.052	4.020	4.084	0.032
DDE	4.124	4.128	4.127	4.115	4.129	4.121	4.119	4.131	4.124	4.092	4.156	0.032
Endosulfan I	4.185	4.191	4.188	4.176	4.192	4.187	4.184	4.195	4.187	4.152	4.222	0.035
Dieldrin	4.436	4.443	4.440	4.428	4.445	4.440	4.436	4.448	4.439	4.407	4.471	0.032
Endrin	4.711	4.717	4.715	4.701	4.720	4.715	4.709	4.723	4.714	4.684	4.744	0.030
DDD	4.808	4.815	4.812	4.797	4.815	4.808	4.801	4.815	4.809	4.779	4.839	0.030
Endosulfan II	5.004	5.011	5.011	4.995	5.015	5.009	5.003	5.016	5.008	4.979	5.037	0.029
DDT	5.204	5.211	5.209	5.191	5.212	5.207	5.197	5.212	5.205	5.175	5.235	0.030
Endrin Aldehyde	5.663	5.669	5.669	5.652	5.673	5.669	5.659	5.675	5.666	5.634	5.698	0.032
Methoxychlor	6.109	6.117	6.117	6.096	6.121	6.113			6.112	6.074	6.150	0.038
Endosulfan Sulfate	6.520	6.531	6.529	6.509	6.535	6.529	6.517	6.535	6.526	6.490	6.562	0.036
Endrin Ketone	7.165	7.176	7.175	7.153	7.181	7.176	7.163	7.181	7.171	7.135	7.207	0.036
Oxychlordane	3.744	3.735	3.739	3.739	3.733	3.748	3.740	3.728	3.738	3.719	3.757	0.019
2,4'-DDE	3.816	3.807	3.811	3.811	3.805	3.819	3.811	3.797	3.810	3.788	3.832	0.022
trans-Nonachlor	4.040	4.031	4.036	4.036	4.031	4.045	4.037	4.024	4.035	4.012	4.058	0.023
2,4'-DDD	4.308	4.299	4.304	4.304	4.296	4.312	4.305	4.289	4.302	4.277	4.327	0.025
2,4'-DDT	4.595	4.584	4.589	4.591	4.581	4.599	4.592	4.576	4.588	4.565	4.611	0.023
cis-Nonachlor	4.763	4.751	4.757	4.759	4.749	4.767	4.760	4.744	4.756	4.734	4.778	0.022
Mirex	6.269	6.251	6.261	6.264	6.248	6.271	6.267	6.244	6.259	6.231	6.287	0.028

SURROGATE	1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	RT	FROM	TO	WIDTH
TCX	2.376	2.379	2.375	2.372	2.377	2.372	2.376	2.383	2.376	2.356	2.396	0.020
DCB	10.363	10.368	10.369	10.351	10.373	10.372	10.359	10.375	10.366	10.316	10.416	0.050

1-29-16

INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
LFID & Datetime: RA20017B 01/20/16 21:00 RA20025B 01/20/16 23:42
LFID & Datetime: RA20018B 01/20/16 21:20 RA20026B 01/21/16 00:03
LFID & Datetime: RA20019B 01/20/16 21:40 RA20027B 01/21/16 00:23
LFID & Datetime: RA20020B 01/20/16 22:01 RA20028B 01/21/16 00:44
LFID & Datetime: RA20021B 01/20/16 22:21 RA20029B 01/21/16 01:04
LFID & Datetime: RA20022B 01/20/16 22:41 RA20030B 01/21/16 01:25
LFID & Datetime: RA20023B 01/20/16 23:01 RA20031B 01/21/16 01:45
LFID & Datetime: RA20024B 01/20/16 23:22 RA20032B 01/21/16 02:06
Method Name : CPF9A20.met

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
alpha-BHC	3.009	3.011	3.007	3.005	3.012	3.005	3.009	3.016	3.009	2.991	3.027	0.018
gamma-BHC	3.244	3.247	3.243	3.240	3.247	3.240	3.244	3.252	3.245	3.228	3.262	0.017
beta-BHC	3.293	3.296	3.292	3.288	3.296	3.288	3.292	3.300	3.293	3.276	3.310	0.017
delta-BHC	3.516	3.519	3.515	3.511	3.520	3.512	3.516	3.523	3.516	3.500	3.533	0.017
Heptachlor	3.579	3.581	3.577	3.573	3.583	3.575	3.579	3.585	3.579	3.561	3.597	0.018
Aldrin	3.863	3.864	3.861	3.856	3.867	3.859	3.863	3.869	3.863	3.844	3.882	0.019
Heptachlor Epoxide	4.449	4.452	4.448	4.443	4.453	4.445	4.449	4.457	4.449	4.426	4.472	0.023
gamma-Chlordane	4.683	4.684	4.680	4.675	4.685	4.679	4.680	4.689	4.682	4.661	4.703	0.021
alpha-Chlordane	4.879	4.880	4.877	4.872	4.883	4.876	4.877	4.885	4.879	4.861	4.897	0.018
DDE	5.116	5.116	5.115	5.107	5.119	5.111	5.111	5.119	5.114	5.098	5.130	0.016
Endosulfan I	4.969	4.972	4.968	4.963	4.973	4.967	4.968	4.977	4.970	4.951	4.989	0.019
Dieldrin	5.395	5.397	5.395	5.388	5.401	5.393	5.393	5.403	5.396	5.379	5.413	0.017
Endrin	5.952	5.955	5.952	5.945	5.959	5.951	5.951	5.960	5.953	5.933	5.973	0.020
DDD	6.201	6.201	6.200	6.191	6.204	6.195	6.193	6.203	6.199	6.180	6.218	0.019
Endosulfan II	6.404	6.405	6.403	6.396	6.408	6.401	6.401	6.411	6.404	6.382	6.426	0.022
DDT	6.960	6.960	6.960	6.949	6.963	6.956	6.955	6.963	6.958	6.934	6.982	0.024
Endrin Aldehyde	7.259	7.260	7.259	7.249	7.264	7.256	7.255	7.264	7.258	7.236	7.280	0.022
Methoxychlor	9.376	9.373	9.375	9.364	9.376	9.371			9.373	9.345	9.401	0.028
Endosulfan Sulfate	8.104	8.105	8.104	8.093	8.109	8.103	8.100	8.109	8.103	8.079	8.127	0.024
Endrin Ketone	9.833	9.829	9.832	9.823	9.835	9.831	9.829	9.835	9.831	9.801	9.861	0.030
Oxychlordane	4.344	4.340	4.341	4.340	4.340	4.349	4.341	4.333	4.341	4.321	4.361	0.020
2,4'-DDE	4.672	4.667	4.668	4.667	4.665	4.676	4.667	4.657	4.667	4.646	4.688	0.021
trans-Nonachlor	4.804	4.799	4.800	4.799	4.799	4.809	4.800	4.792	4.800	4.782	4.818	0.018
2,4'-DDD	5.455	5.449	5.449	5.449	5.447	5.457	5.449	5.440	5.449	5.431	5.467	0.018
2,4'-DDT	6.039	6.033	6.033	6.035	6.031	6.043	6.035	6.024	6.034	6.015	6.053	0.019
cis-Nonachlor	6.124	6.117	6.117	6.119	6.115	6.127	6.120	6.109	6.118	6.100	6.136	0.018
Mirex	9.643	9.636	9.636	9.636	9.635	9.643	9.639	9.629	9.637	9.613	9.661	0.024

SURROGATE	1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	RT	FROM	TO	WIDTH
TCX	2.631	2.633	2.628	2.627	2.632	2.625	2.631	2.637	2.630	2.607	2.653	0.023
DCB	12.144	12.135	12.139	12.133	12.137	12.137	12.137	12.140	12.138	12.103	12.173	0.035

1-29-16

PEM PEST BREAKDOWN CALCULATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.32UM 30MX0.32MMIDX0.25UM
PEM LFID & Datetime : RA20007A RA20007B 01/20/16 17:37

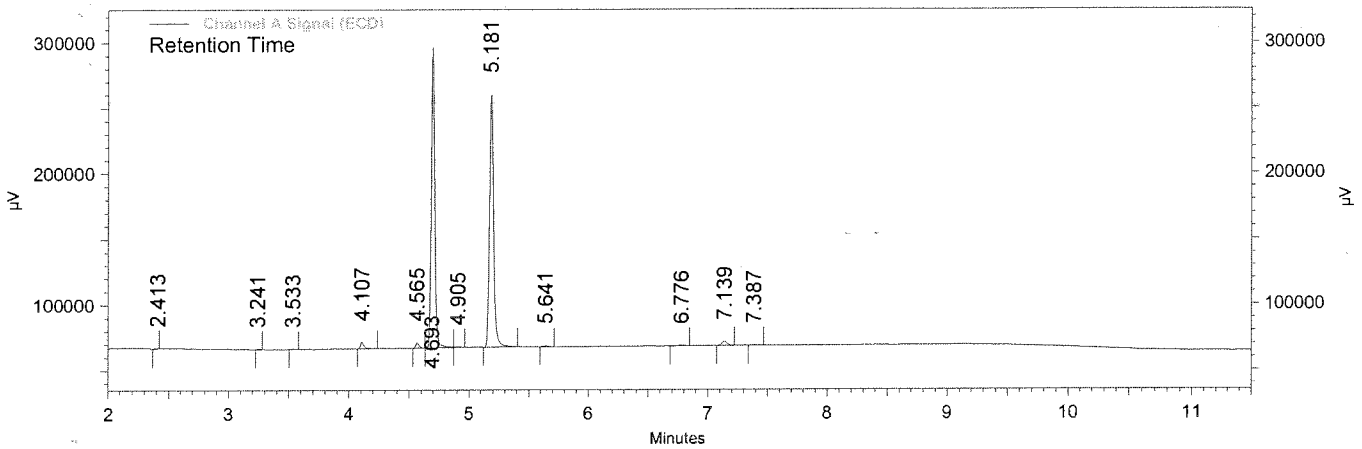
Base on AREA

	AREA				% Breakdown				
LFID	DDD	DDE	DDT	TOTAL	DDD	DDE	TOTAL	QL	QCLIMIT
RA20007A	0.0	554020.0	25254676.0	25808696.0	0.00	2.15	2.15		15
RA20007B	0.0	144663.0	7151509.0	7296172.0	0.00	1.98	1.98		15
LFID	ENDRIN	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	QL	QCLIMIT
RA20007A	25924992.0	101759.0	508844.0	26535596.0	0.38	1.92	2.30		15
RA20007B	8795345.0	26540.0	147059.0	8968944.0	0.30	1.64	1.94		15

1-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2001
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20007.dat
User: ESanto
Acquired: 01/20/16 17:37:19
Printed: 01/21/16 16:05:13



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376				0.000 BDL	
alpha-BHC	2.695				0.000 BDL	
gamma-BHC	2.879				0.000 BDL	
beta-BHC	2.927				0.000 BDL	
delta-BHC	3.035				0.000 BDL	
Heptachlor	3.163				0.000 BDL	
Aldrin	3.363				0.000 BDL	
Heptachlor Epoxide	3.821				0.000 BDL	
gamma-Chlordane	3.929				0.000 BDL	
alpha-Chlordane	4.049				0.000 BDL	
DDE	4.119	4.107	554020	343789.3	1.612	BB
Endosulfan I	4.185				0.000 BDL	
Dieldrin	4.436				0.000 BDL	
Endrin	4.711	4.693	25924993	343628.3	75.445	BV
DDD	4.801				0.000 BDL	
Endosulfan II	5.004				0.000 BDL	
DDT	5.199	5.181	25254675	312997.5	80.687	BS
Endrin aldehyde	5.661	5.641	101759	326603.1	0.312	BB
Methoxychlor	6.103				0.000 BDL	
Endosulfan Sulfate	6.519				0.000 BDL	
Endrin Ketone	7.164	7.139	508844	446868.0	1.139	BS
DCB	10.360				0.000 BDL	

1-29-16

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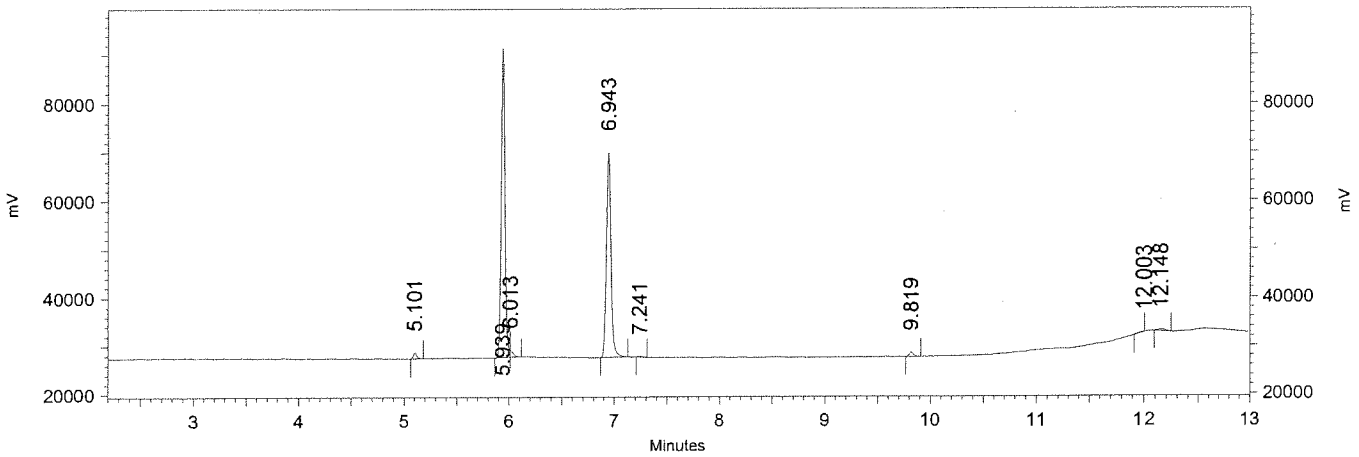
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2001
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20007.dat
User: ESanto
Acquired: 01/20/16 17:37:19
Printed: 01/21/16 16:05:13



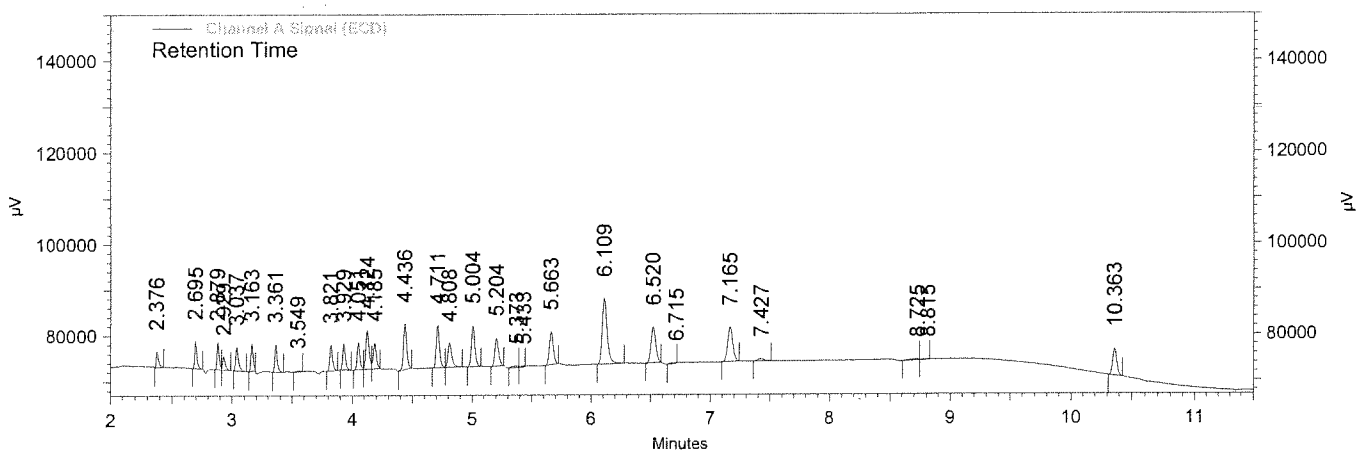
Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631				0.000 BDL	
alpha-BHC	3.009				0.000 BDL	
gamma-BHC	3.245				0.000 BDL	
beta-BHC	3.292				0.000 BDL	
delta-BHC	3.516				0.000 BDL	
Heptachlor	3.579				0.000 BDL	
Aldrin	3.863				0.000 BDL	
Heptachlor Epoxide	4.449				0.000 BDL	
gamma-Chlordane	4.680				0.000 BDL	
alpha-Chlordane	4.877				0.000 BDL	
Endosulfan I	4.968				0.000 BDL	
DDE	5.109	5.101	144663	95539.7	1.514	BB
Dieldrin	5.395				0.000 BDL	
Endrin	5.951	5.939	8795345	99144.3	88.713	SS
DDD	6.192				0.000 BDL	
Endosulfan II	6.401				0.000 BDL	
DDT	6.953	6.943	7151509	74582.2	95.888	BS
Endrin Aldehyde	7.255	7.241	26540	96524.7	0.275	BB
Endosulfan Sulfate	8.097				0.000 BDL	
Methoxychlor	9.365				0.000 BDL	
Endrin Ketone	9.825	9.819	147059	123295.7	1.193	BB
DCB	12.132	12.148	86846	145864.8	0.595	BI

JW 1-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2001 (1.25/2.5/12.5ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20017.dat
User: ESanto
Acquired: 01/20/16 21:00:02
Printed: 01/21/16 15:42:08



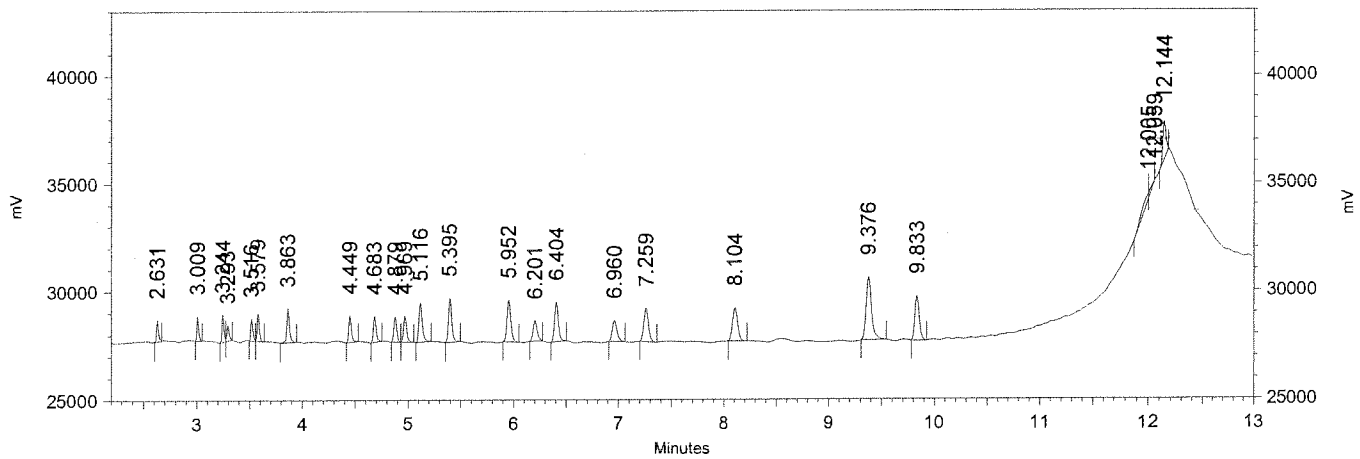
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.376	256305	210406.3	1.250 CAL	BI
alpha-BHC	2.695	2.695	413618	332088.1	1.250 CAL	BI
gamma-BHC	2.879	2.879	419469	327031.5	1.250 CAL	BV
beta-BHC	2.927	2.929	246853	191799.2	1.250 CAL	VI
delta-BHC	3.035	3.037	432912	355796.5	1.250 CAL	BB
Heptachlor	3.163	3.163	431284	340376.6	1.250 CAL	BI
Aldrin	3.363	3.361	466074	354684.2	1.250 CAL	BB
Heptachlor Epoxide	3.821	3.821	476130	359106.5	1.250 CAL	BI
gamma-Chlordane	3.929	3.929	499288	392256.3	1.250 CAL	IB
alpha-Chlordane	4.049	4.051	528670	394418.4	1.250 CAL	BV
DDE	4.119	4.124	862629	343789.3	2.500 CAL	VV
Endosulfan I	4.185	4.185	527457	419333.4	1.250 CAL	VI
Dieldrin	4.436	4.436	992869	357645.0	2.500 CAL	BI
Endrin	4.711	4.711	959417	343628.3	2.500 CAL	BV
DDD	4.801	4.808	646387	268752.2	2.500 CAL	VB
Endosulfan II	5.004	5.004	1009483	367000.6	2.500 CAL	BI
DDT	5.199	5.204	749114	312997.5	2.500 CAL	BI
Endrin aldehyde	5.661	5.663	907913	326603.1	2.500 CAL	SI
Methoxychlor	6.103	6.109	2321426	164669.2	12.500 CAL	BB
Endosulfan Sulfate	6.519	6.520	1147698	409015.5	2.500 CAL	SI
Endrin Ketone	7.164	7.165	1218929	446868.0	2.500 CAL	BI
DCB	10.360	10.363	784395	567820.8	1.250 CAL	BI

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2001 (1.25/2.5/12.5ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20017.dat
User: ESanto
Acquired: 01/20/16 21:00:02
Printed: 01/21/16 15:42:08



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.631	71850	53703.4	1.250 CAL	BB
alpha-BHC	3.009	3.009	73209	72036.4	1.250 CAL	BB
gamma-BHC	3.245	3.244	93513	79373.3	1.250 CAL	SV
beta-BHC	3.292	3.293	59273	51602.9	1.250 CAL	VI
delta-BHC	3.516	3.516	81930	77332.0	1.250 CAL	BV
Heptachlor	3.579	3.579	98848	87869.0	1.250 CAL	VB
Aldrin	3.863	3.863	154665	103752.3	1.250 CAL	SB
Heptachlor Epoxide	4.449	4.449	117631	97064.9	1.250 CAL	SB
gamma-Chlordane	4.680	4.683	123312	102558.3	1.250 CAL	BB
alpha-Chlordane	4.877	4.879	119176	101533.5	1.250 CAL	BV
Endosulfan I	4.968	4.969	134253	105819.2	1.250 CAL	VB
DDE	5.109	5.116	222575	95539.7	2.500 CAL	BB
Dieldrin	5.395	5.395	247620	99969.4	2.500 CAL	BS
Endrin	5.951	5.952	262069	99144.3	2.500 CAL	BB
DDD	6.192	6.201	144694	66411.8	2.500 CAL	BS
Endosulfan II	6.401	6.404	270218	103675.6	2.500 CAL	BB
DDT	6.953	6.960	165858	74582.2	2.500 CAL	BS
Endrin Aldehyde	7.255	7.259	261556	96524.7	2.500 CAL	BB
Endosulfan Sulfate	8.097	8.104	284165	111570.2	2.500 CAL	BB
Methoxychlor	9.365	9.376	579147	45652.3	12.500 CAL	BB
Endrin Ketone	9.825	9.833	320435	123295.7	2.500 CAL	BB
DCB	12.132	12.144	184241	145864.8	1.250 CAL	II

TW 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2002 (2.5/5/25ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20018.dat
User: ESanto
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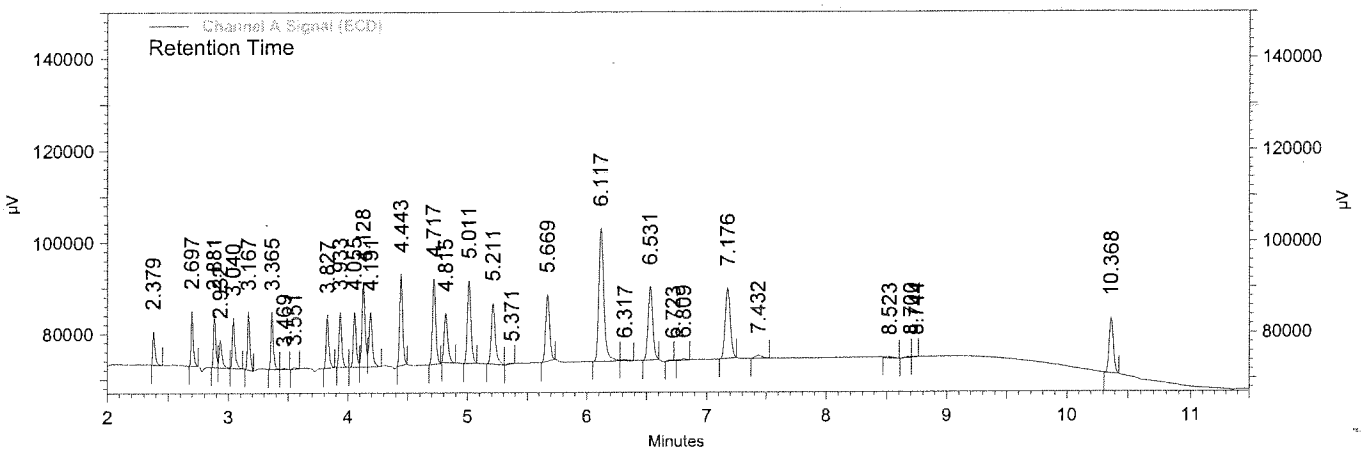


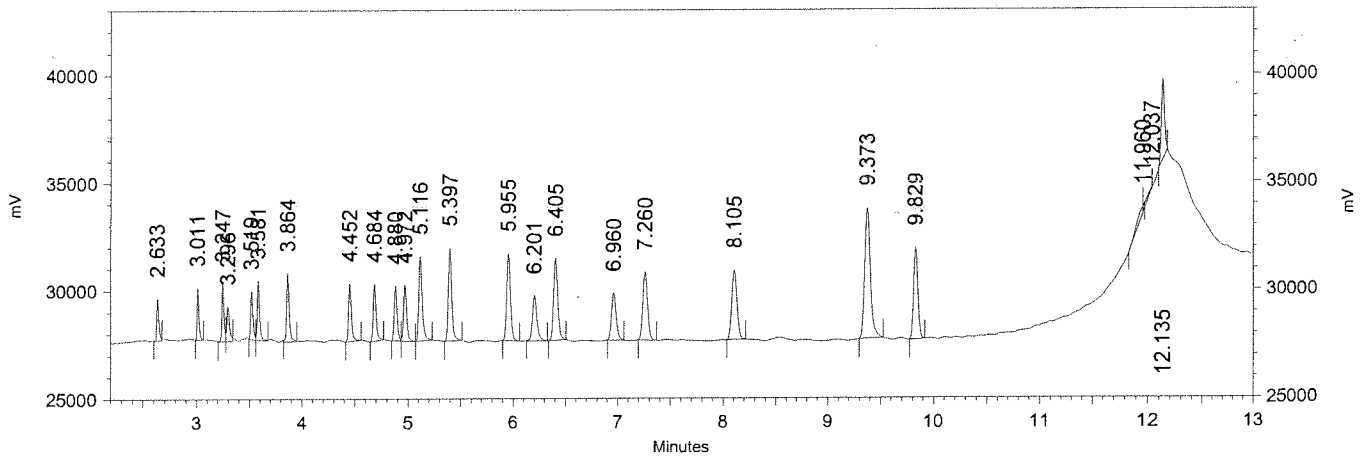
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.379	539004	210406.3	2.500 CAL	BB
alpha-BHC	2.695	2.697	843322	332088.1	2.500 CAL	BI
gamma-BHC	2.879	2.881	869294	327031.5	2.500 CAL	BV
beta-BHC	2.927	2.932	539969	191799.2	2.500 CAL	VV
delta-BHC	3.035	3.040	923874	355796.5	2.500 CAL	VB
Heptachlor	3.163	3.167	977523	340376.6	2.500 CAL	BB
Aldrin	3.363	3.365	983732	354684.2	2.500 CAL	SV
Heptachlor Epoxide	3.821	3.827	1008669	359106.5	2.500 CAL	BI
gamma-Chlordane	3.929	3.933	1072108	392256.3	2.500 CAL	IB
alpha-Chlordane	4.049	4.055	1121680	394418.4	2.500 CAL	BV
DDE	4.119	4.128	1887950	343789.3	5.000 CAL	VV
Endosulfan I	4.185	4.191	1206616	419333.4	2.500 CAL	VB
Dieldrin	4.436	4.443	1954384	357645.0	5.000 CAL	II
Endrin	4.711	4.717	1952850	343628.3	5.000 CAL	BB
DDD	4.801	4.815	1268876	268752.2	5.000 CAL	IS
Endosulfan II	5.004	5.011	2062586	367000.6	5.000 CAL	BI
DDT	5.199	5.211	1740935	312997.5	5.000 CAL	BB
Endrin aldehyde	5.661	5.669	1848183	326603.1	5.000 CAL	SI
Methoxychlor	6.103	6.117	4758921	164669.2	25.000 CAL	BV
Endosulfan Sulfate	6.519	6.531	2372593	409015.5	5.000 CAL	SI
Endrin Ketone	7.164	7.176	2500360	446868.0	5.000 CAL	BI
DCB	10.360	10.368	1625894	567820.8	2.500 CAL	BI

DW 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2002 (2.5/5/25ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20018.dat
User: ESanto
Acquired: 01/20/16 21:20:24
Printed: 01/21/16 15:42:51



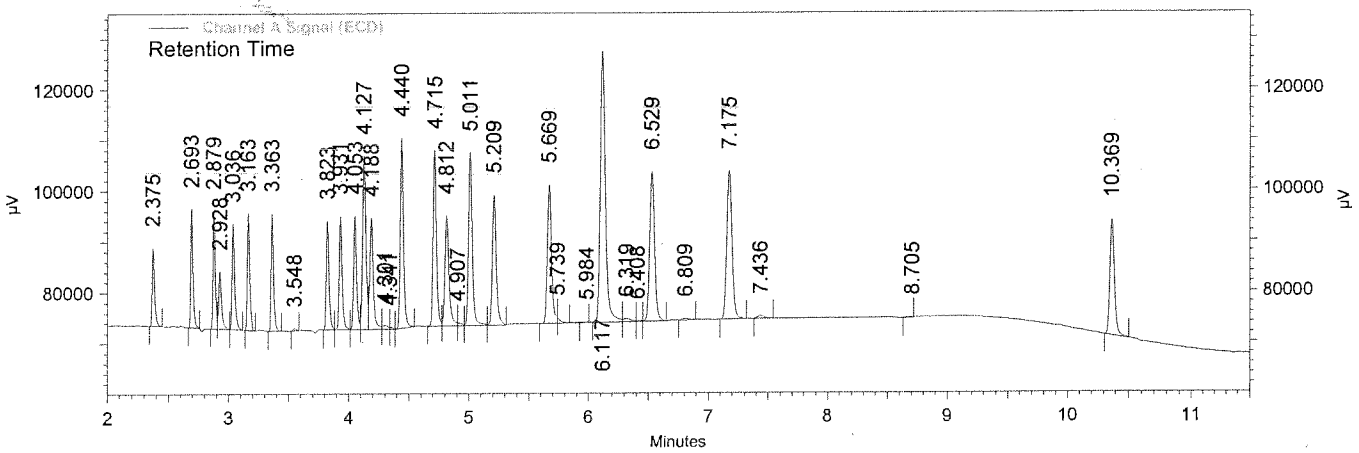
Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.633	143659	53703.4	2.500 CAL	SB
alpha-BHC	3.009	3.011	163607	72036.4	2.500 CAL	BS
gamma-BHC	3.245	3.247	201703	79373.3	2.500 CAL	SV
beta-BHC	3.292	3.296	148633	51602.9	2.500 CAL	VS
delta-BHC	3.516	3.519	179404	77332.0	2.500 CAL	BV
Heptachlor	3.579	3.581	236146	87869.0	2.500 CAL	VB
Aldrin	3.863	3.864	296891	103752.3	2.500 CAL	SS
Heptachlor Epoxide	4.449	4.452	270684	97064.9	2.500 CAL	SB
gamma-Chlordane	4.680	4.684	282666	102558.3	2.500 CAL	SS
alpha-Chlordane	4.877	4.880	269220	101533.5	2.500 CAL	BV
Endosulfan I	4.968	4.972	295216	105819.2	2.500 CAL	VB
DDE	5.109	5.116	491300	95539.7	5.000 CAL	BB
Dieldrin	5.395	5.397	530166	99969.4	5.000 CAL	BB
Endrin	5.951	5.955	539545	99144.3	5.000 CAL	BB
DDD	6.192	6.201	339612	66411.8	5.000 CAL	SB
Endosulfan II	6.401	6.405	563867	103675.6	5.000 CAL	BS
DDT	6.953	6.960	360546	74582.2	5.000 CAL	BS
Endrin Aldehyde	7.255	7.260	531769	96524.7	5.000 CAL	BB
Endosulfan Sulfate	8.097	8.105	603469	111570.2	5.000 CAL	BB
Methoxychlor	9.365	9.373	1205937	45652.3	25.000 CAL	BS
Endrin Ketone	9.825	9.829	659824	123295.7	5.000 CAL	BB
DCB	12.132	12.135	392039	145864.8	2.500 CAL	II

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2003 (5/10/50ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20019.dat
User: ESanto
Acquired: 01/20/16 21:40:42
Printed: 01/21/16 15:43:27



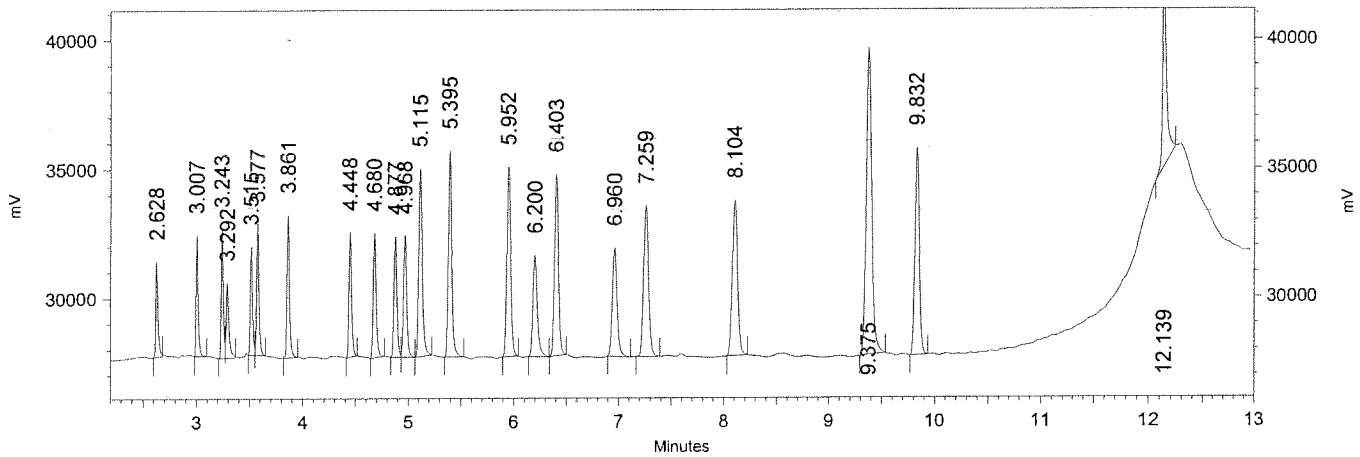
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.375	1136659	210406.3	5.000 CAL	BS
alpha-BHC	2.695	2.693	1657691	332088.1	5.000 CAL	BI
gamma-BHC	2.879	2.879	1652279	327031.5	5.000 CAL	BV
beta-BHC	2.927	2.928	1007471	191799.2	5.000 CAL	VV
delta-BHC	3.035	3.036	1740168	355796.5	5.000 CAL	VS
Heptachlor	3.163	3.163	1762978	340376.6	5.000 CAL	BB
Aldrin	3.363	3.363	1810896	354684.2	5.000 CAL	SB
Heptachlor Epoxide	3.821	3.823	1875496	359106.5	5.000 CAL	BV
gamma-Chlordane	3.929	3.931	2084980	392256.3	5.000 CAL	VV
alpha-Chlordane	4.049	4.053	2087745	394418.4	5.000 CAL	VV
DDE	4.119	4.127	3533115	343789.3	10.000 CAL	VV
Endosulfan I	4.185	4.188	2335708	419333.4	5.000 CAL	VV
Dieldrin	4.436	4.440	3797982	357645.0	10.000 CAL	BB
Endrin	4.711	4.715	3695270	343628.3	10.000 CAL	SV
DDD	4.801	4.812	2788527	268752.2	10.000 CAL	VS
Endosulfan II	5.004	5.011	4079903	367000.6	10.000 CAL	VV
DDT	5.199	5.209	3263028	312997.5	10.000 CAL	VB
Endrin aldehyde	5.661	5.669	3680468	326603.1	10.000 CAL	SS
Methoxychlor	6.103	6.117	8861475	164669.2	50.000 CAL	SV
Endosulfan Sulfate	6.519	6.529	4556280	409015.5	10.000 CAL	SB
Endrin Ketone	7.164	7.175	4874349	446868.0	10.000 CAL	BB
DCB	10.360	10.369	3292099	567820.8	5.000 CAL	BS

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2003 (5/10/50ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20019.dat
User: ESanto
Acquired: 01/20/16 21:40:42
Printed: 01/21/16 15:43:27



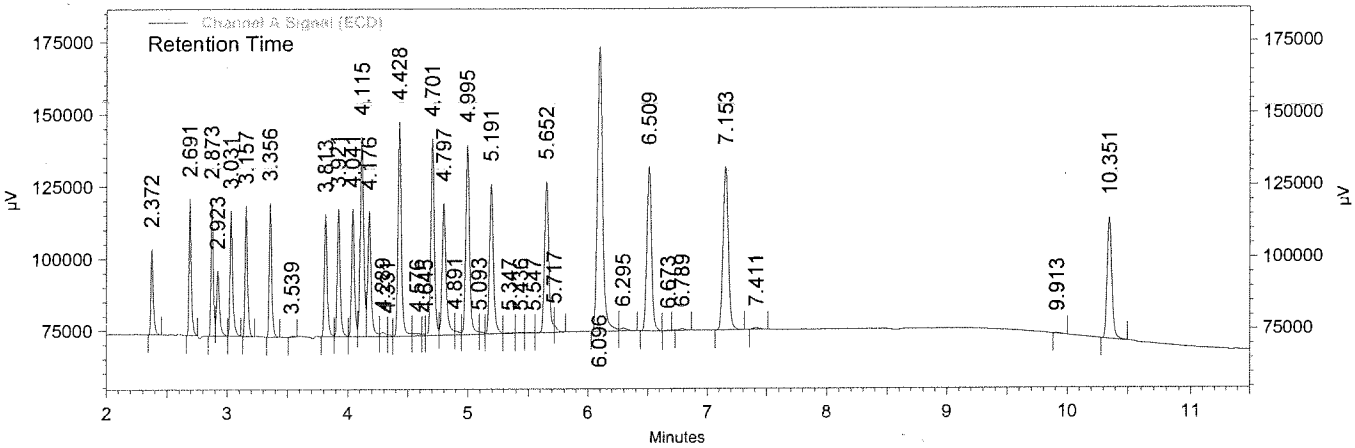
Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.628	278509	53703.4	5.000 CAL	SS
alpha-BHC	3.009	3.007	328952	72036.4	5.000 CAL	BB
gamma-BHC	3.245	3.243	368629	79373.3	5.000 CAL	SV
beta-BHC	3.292	3.292	277211	51602.9	5.000 CAL	VS
delta-BHC	3.516	3.515	344908	77332.0	5.000 CAL	BV
Heptachlor	3.579	3.577	423696	87869.0	5.000 CAL	VS
Aldrin	3.863	3.861	495217	103752.3	5.000 CAL	SS
Heptachlor Epoxide	4.449	4.448	474043	97064.9	5.000 CAL	SS
gamma-Chlordane	4.680	4.680	504705	102558.3	5.000 CAL	BB
alpha-Chlordane	4.877	4.877	505179	101533.5	5.000 CAL	SV
Endosulfan I	4.968	4.968	527685	105819.2	5.000 CAL	VB
DDE	5.109	5.115	915606	95539.7	10.000 CAL	BS
Dieldrin	5.395	5.395	972599	99969.4	10.000 CAL	BB
Endrin	5.951	5.952	992477	99144.3	10.000 CAL	BS
DDD	6.192	6.200	625698	66411.8	10.000 CAL	BB
Endosulfan II	6.401	6.403	1036080	103675.6	10.000 CAL	BS
DDT	6.953	6.960	718832	74582.2	10.000 CAL	BB
Endrin Aldehyde	7.255	7.259	1023840	96524.7	10.000 CAL	SB
Endosulfan Sulfate	8.097	8.104	1156475	111570.2	10.000 CAL	BB
Methoxychlor	9.365	9.375	2328286	45652.3	50.000 CAL	BS
Endrin Ketone	9.825	9.832	1262178	123295.7	10.000 CAL	BB
DCB	12.132	12.139	962302	145864.8	5.000 CAL	II

RC 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2004 (10/20/100ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20020.dat
User: ESanto
Acquired: 01/20/16 22:01:02
Printed: 01/21/16 15:43:44



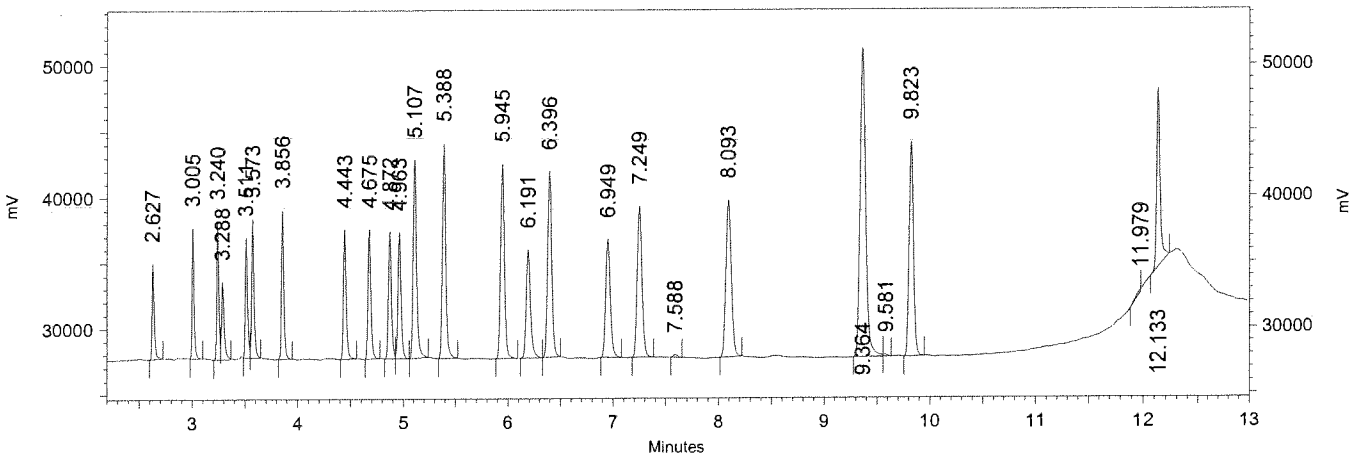
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.372	2251933	210406.3	10.000 CAL	BS
alpha-BHC	2.695	2.691	3415803	332088.1	10.000 CAL	BI
gamma-BHC	2.879	2.873	3404287	327031.5	10.000 CAL	BV
beta-BHC	2.927	2.923	2009045	191799.2	10.000 CAL	VB
delta-BHC	3.035	3.031	3628078	355796.5	10.000 CAL	BS
Heptachlor	3.163	3.157	3551703	340376.6	10.000 CAL	BB
Aldrin	3.363	3.356	3694188	354684.2	10.000 CAL	SB
Heptachlor Epoxide	3.821	3.813	3775896	359106.5	10.000 CAL	IV
gamma-Chlordane	3.929	3.921	4127335	392256.3	10.000 CAL	VV
alpha-Chlordane	4.049	4.041	4138128	394418.4	10.000 CAL	VV
DDE	4.119	4.115	7149853	343789.3	20.000 CAL	VV
Endosulfan I	4.185	4.176	4584902	419333.4	10.000 CAL	VV
Dieldrin	4.436	4.428	7725101	357645.0	20.000 CAL	BV
Endrin	4.711	4.701	7471123	343628.3	20.000 CAL	SV
DDD	4.801	4.797	5833736	268752.2	20.000 CAL	VS
Endosulfan II	5.004	4.995	8024482	367000.6	20.000 CAL	VS
DDT	5.199	5.191	6608167	312997.5	20.000 CAL	VV
Endrin aldehyde	5.661	5.652	7106960	326603.1	20.000 CAL	SS
Methoxychlor	6.103	6.096	16401715	164669.2	100.000 CAL	SV
Endosulfan Sulfate	6.519	6.509	8695217	409015.5	20.000 CAL	BB
Endrin Ketone	7.164	7.153	9583315	446868.0	20.000 CAL	BS
DCB	10.360	10.351	6186556	567820.8	10.000 CAL	BS

RL 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2004 (10/20/100ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20020.dat
User: ESanto
Acquired: 01/20/16 22:01:02
Printed: 01/21/16 15:43:44



Channel B Signal
(ECD) Results

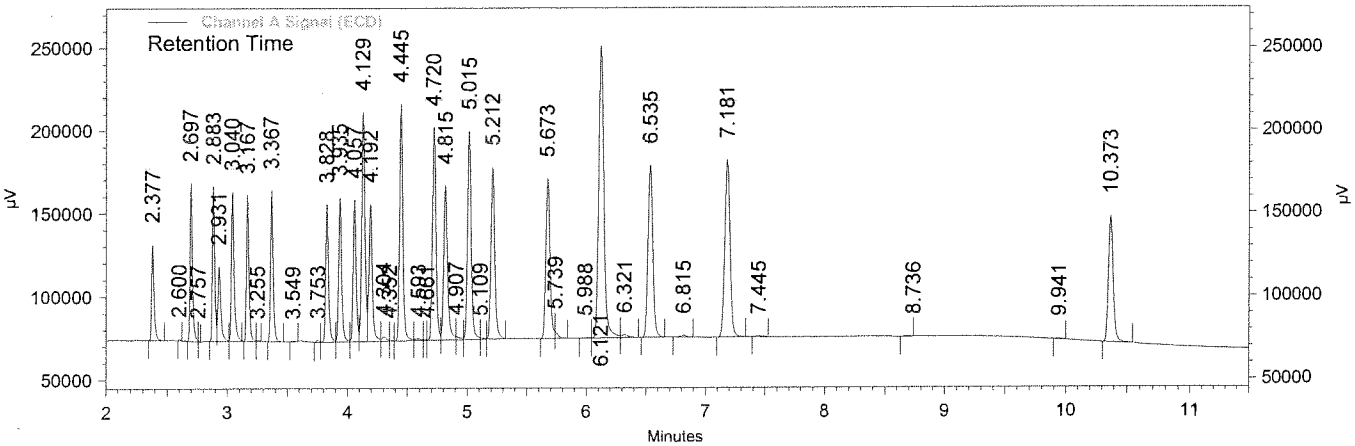
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.627	558809	53703.4	10.000 CAL	SS
alpha-BHC	3.009	3.005	702439	72036.4	10.000 CAL	BB
gamma-BHC	3.245	3.240	773722	79373.3	10.000 CAL	SV
beta-BHC	3.292	3.288	546405	51602.9	10.000 CAL	VS
delta-BHC	3.516	3.511	743173	77332.0	10.000 CAL	BV
Heptachlor	3.579	3.573	898386	87869.0	10.000 CAL	VS
Aldrin	3.863	3.856	990106	103752.3	10.000 CAL	SS
Heptachlor Epoxide	4.449	4.443	996400	97064.9	10.000 CAL	SB
gamma-Chlordane	4.680	4.675	1034350	102558.3	10.000 CAL	BB
alpha-Chlordane	4.877	4.872	1037983	101533.5	10.000 CAL	SV
Endosulfan I	4.968	4.963	1072569	105819.2	10.000 CAL	VB
DDE	5.109	5.107	1903702	95539.7	20.000 CAL	BS
Dieldrin	5.395	5.388	1999954	99969.4	20.000 CAL	BS
Endrin	5.951	5.945	2024727	99144.3	20.000 CAL	BB
DDD	6.192	6.191	1292667	66411.8	20.000 CAL	SB
Endosulfan II	6.401	6.396	2092917	103675.6	20.000 CAL	BS
DDT	6.953	6.949	1492824	74582.2	20.000 CAL	BS
Endrin Aldehyde	7.255	7.249	2007117	96524.7	20.000 CAL	BB
Endosulfan Sulfate	8.097	8.093	2325127	111570.2	20.000 CAL	BS
Methoxychlor	9.365	9.364	4700080	45652.3	100.000 CAL	BV
Endrin Ketone	9.825	9.823	2540386	123295.7	20.000 CAL	SB
DCB	12.132	12.133	1586879	145864.8	10.000 CAL	IB

tu
01-29-16

636

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2005 (20/40/200ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20021.dat
User: ESanto
Acquired: 01/20/16 22:21:23
Printed: 01/21/16 15:44:22



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.377	4510473	210406.3	20.000 CAL	BB
alpha-BHC	2.695	2.697	7084678	332088.1	20.000 CAL	VS
gamma-BHC	2.879	2.883	6863196	327031.5	20.000 CAL	BV
beta-BHC	2.927	2.931	3997031	191799.2	20.000 CAL	VV
delta-BHC	3.035	3.040	7573925	355796.5	20.000 CAL	VS
Heptachlor	3.163	3.167	7042137	340376.6	20.000 CAL	VV
Aldrin	3.363	3.367	7303893	354684.2	20.000 CAL	BB
Heptachlor Epoxide	3.821	3.828	7534286	359106.5	20.000 CAL	SV
gamma-Chlordane	3.929	3.935	8155367	392256.3	20.000 CAL	VV
alpha-Chlordane	4.049	4.057	8042827	394418.4	20.000 CAL	VV
DDE	4.119	4.129	14263219	343789.3	40.000 CAL	VV
Endosulfan I	4.185	4.192	8621280	419333.4	20.000 CAL	VV
Dieldrin	4.436	4.445	14652967	357645.0	40.000 CAL	VV
Endrin	4.711	4.720	14020505	343628.3	40.000 CAL	SV
DDD	4.801	4.815	11345848	268752.2	40.000 CAL	VS
Endosulfan II	5.004	5.015	14844247	367000.6	40.000 CAL	VS
DDT	5.199	5.212	12787447	312997.5	40.000 CAL	VB
Endrin aldehyde	5.661	5.673	13160314	326603.1	40.000 CAL	SS
Methoxychlor	6.103	6.121	29244040	164669.2	200.000 CAL	SV
Endosulfan Sulfate	6.519	6.535	16270582	409015.5	40.000 CAL	BB
Endrin Ketone	7.164	7.181	18069752	446868.0	40.000 CAL	BS
DCB	10.360	10.373	11213865	567820.8	20.000 CAL	BI

TM 01-22-16

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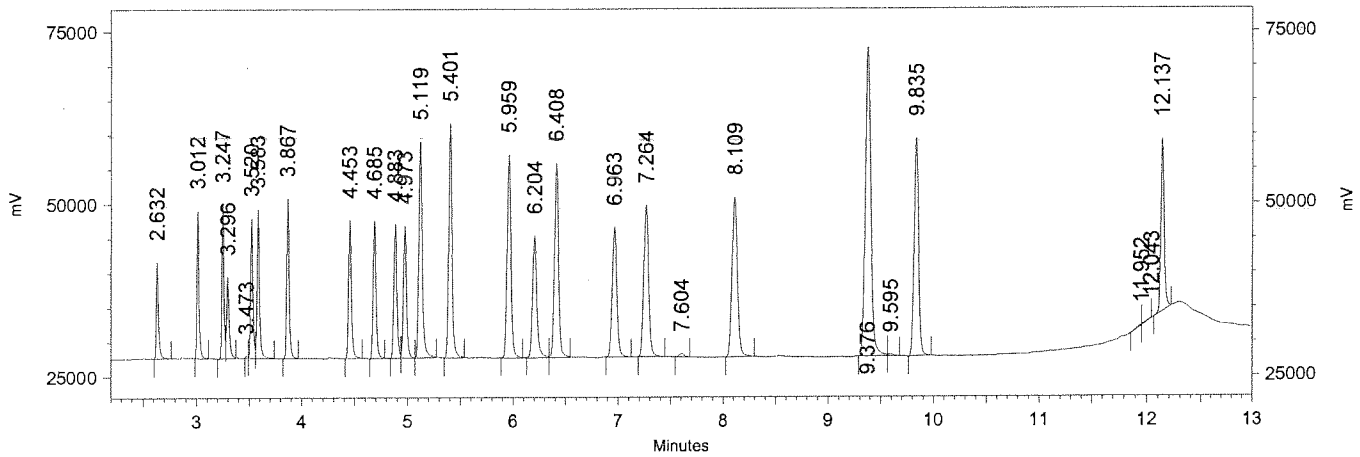
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2005 (20/40/200ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20021.dat
User: ESanto
Acquired: 01/20/16 22:21:23
Printed: 01/21/16 15:44:22



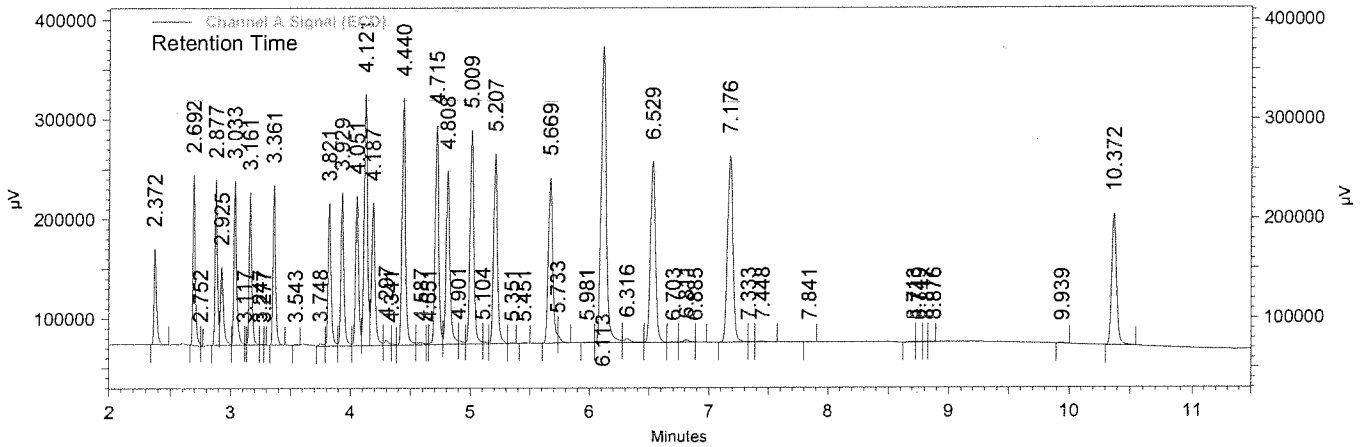
Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.632	1097720	53703.4	20.000 CAL	SI
alpha-BHC	3.009	3.012	1544216	72036.4	20.000 CAL	BS
gamma-BHC	3.245	3.247	1644721	79373.3	20.000 CAL	BV
beta-BHC	3.292	3.296	1057230	51602.9	20.000 CAL	VB
delta-BHC	3.516	3.520	1646746	77332.0	20.000 CAL	VV
Heptachlor	3.579	3.583	1899839	87869.0	20.000 CAL	VS
Aldrin	3.863	3.867	2013046	103752.3	20.000 CAL	SS
Heptachlor Epoxide	4.449	4.453	2005140	97064.9	20.000 CAL	BB
gamma-Chlordane	4.680	4.685	2111755	102558.3	20.000 CAL	BV
alpha-Chlordane	4.877	4.883	2101519	101533.5	20.000 CAL	VV
Endosulfan I	4.968	4.973	2145175	105819.2	20.000 CAL	VV
DDE	5.109	5.119	3947206	95539.7	40.000 CAL	VS
Dieldrin	5.395	5.401	4108899	99969.4	40.000 CAL	BS
Endrin	5.951	5.959	4050878	99144.3	40.000 CAL	SV
DDD	6.192	6.204	2727634	66411.8	40.000 CAL	SV
Endosulfan II	6.401	6.408	4251846	103675.6	40.000 CAL	VS
DDT	6.953	6.963	3098043	74582.2	40.000 CAL	SB
Endrin Aldehyde	7.255	7.264	3858754	96524.7	40.000 CAL	BB
Endosulfan Sulfate	8.097	8.109	4554905	111570.2	40.000 CAL	BB
Methoxychlor	9.365	9.376	8912602	45652.3	200.000 CAL	BV
Endrin Ketone	9.825	9.835	4987065	123295.7	40.000 CAL	SB
DCB	12.132	12.137	2801290	145864.8	20.000 CAL	IB

Pm 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2006 (40/80/400ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20022.dat
User: ESanto
Acquired: 01/20/16 22:41:41
Printed: 01/21/16 15:44:41



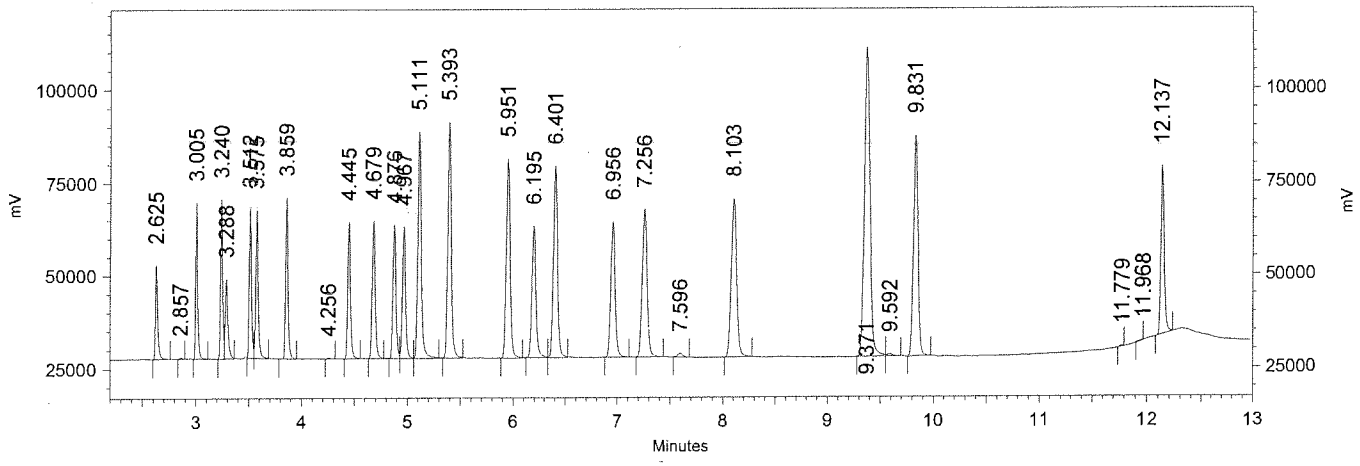
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.372	7713414	210406.3	40.000 CAL	BB
alpha-BHC	2.695	2.692	13031248	332088.1	40.000 CAL	BS
gamma-BHC	2.879	2.877	12369905	327031.5	40.000 CAL	BV
beta-BHC	2.927	2.925	7113290	191799.2	40.000 CAL	VV
delta-BHC	3.035	3.033	13957405	355796.5	40.000 CAL	VS
Heptachlor	3.163	3.161	12573875	340376.6	40.000 CAL	VS
Aldrin	3.363	3.361	13177561	354684.2	40.000 CAL	BS
Heptachlor Epoxide	3.821	3.821	13396695	359106.5	40.000 CAL	VV
gamma-Chlordane	3.929	3.929	14787543	392256.3	40.000 CAL	VV
alpha-Chlordane	4.049	4.051	14479523	394418.4	40.000 CAL	VV
DDE	4.119	4.121	26086483	343789.3	80.000 CAL	VV
Endosulfan I	4.185	4.187	15290855	419333.4	40.000 CAL	VV
Dieldrin	4.436	4.440	26123321	357645.0	80.000 CAL	BV
Endrin	4.711	4.715	24634438	343628.3	80.000 CAL	SV
DDD	4.801	4.808	21118926	268752.2	80.000 CAL	VS
Endosulfan II	5.004	5.009	26139775	367000.6	80.000 CAL	VS
DDT	5.199	5.207	23612023	312997.5	80.000 CAL	VB
Endrin aldehyde	5.661	5.669	22911056	326603.1	80.000 CAL	SS
Methoxychlor	6.103	6.113	49790983	164669.2	400.000 CAL	SV
Endosulfan Sulfate	6.519	6.529	28681342	409015.5	80.000 CAL	VV
Endrin Ketone	7.164	7.176	32349711	446868.0	80.000 CAL	BS
DCB	10.360	10.372	19910839	567820.8	40.000 CAL	BI

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2006 (40/80/400ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20022.dat
User: ESanto
Acquired: 01/20/16 22:41:41
Printed: 01/21/16 15:44:41



Channel B Signal
(ECD) Results

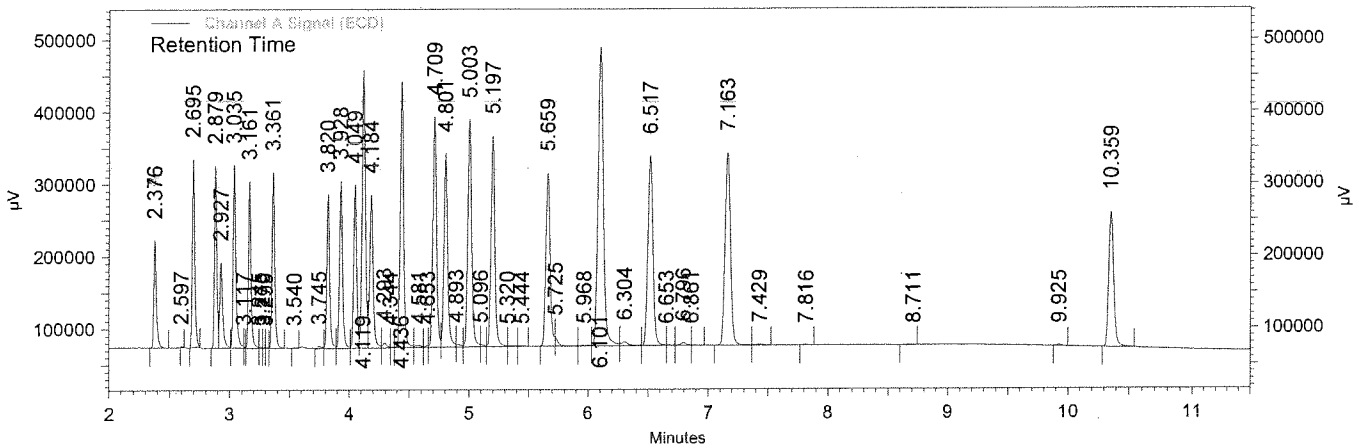
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.625	1991659	53703.4	40.000 CAL	SB
alpha-BHC	3.009	3.005	3050970	72036.4	40.000 CAL	IS
gamma-BHC	3.245	3.240	3167972	79373.3	40.000 CAL	SV
beta-BHC	3.292	3.288	1928326	51602.9	40.000 CAL	VB
delta-BHC	3.516	3.512	3229967	77332.0	40.000 CAL	BV
Heptachlor	3.579	3.575	3461499	87869.0	40.000 CAL	VS
Aldrin	3.863	3.859	3791299	103752.3	40.000 CAL	BS
Heptachlor Epoxide	4.449	4.445	3692998	97064.9	40.000 CAL	BS
gamma-Chlordane	4.680	4.679	3920337	102558.3	40.000 CAL	BV
alpha-Chlordane	4.877	4.876	3926947	101533.5	40.000 CAL	VV
Endosulfan I	4.968	4.967	3986380	105819.2	40.000 CAL	VV
DDE	5.109	5.111	7599118	95539.7	80.000 CAL	VS
Dieldrin	5.395	5.393	7734610	99969.4	80.000 CAL	VS
Endrin	5.951	5.951	7424326	99144.3	80.000 CAL	SV
DDD	6.192	6.195	5318219	66411.8	80.000 CAL	SV
Endosulfan II	6.401	6.401	7805189	103675.6	80.000 CAL	VS
DDT	6.953	6.956	6000723	74582.2	80.000 CAL	SS
Endrin Aldehyde	7.255	7.256	7000123	96524.7	80.000 CAL	BB
Endosulfan Sulfate	8.097	8.103	8324408	111570.2	80.000 CAL	BS
Methoxychlor	9.365	9.371	16486123	45652.3	400.000 CAL	BV
Endrin Ketone	9.825	9.831	9313799	123295.7	80.000 CAL	BB
DCB	12.132	12.137	5137497	145864.8	40.000 CAL	IB

TM 01-29-16

646

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2007 (60/120/600ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20023.dat
User: ESanto
Acquired: 01/20/16 23:01:59
Printed: 01/21/16 15:45:00



Channel A Signal (ECD) Results

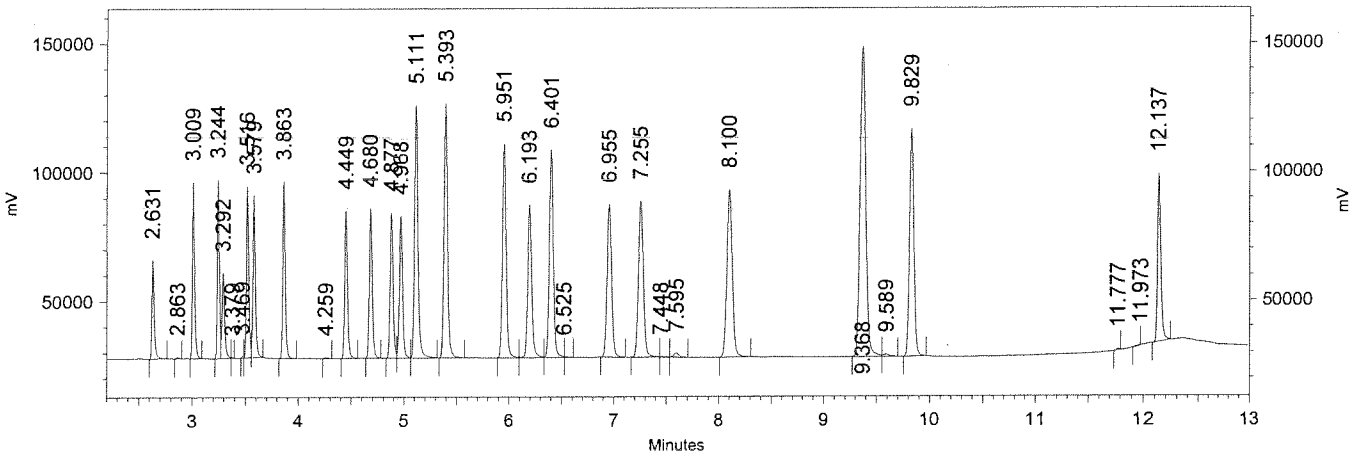
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.376	12076272	210406.3	60.000 CAL	BB
alpha-BHC	2.695	2.695	19634481	332088.1	60.000 CAL	BI
gamma-BHC	2.879	2.879	19124719	327031.5	60.000 CAL	BV
beta-BHC	2.927	2.927	10711458	191799.2	60.000 CAL	VV
delta-BHC	3.035	3.035	21619797	355796.5	60.000 CAL	VS
Heptachlor	3.163	3.161	19266990	340376.6	60.000 CAL	VS
Aldrin	3.363	3.361	20261390	354684.2	60.000 CAL	VS
Heptachlor Epoxide	3.821	3.820	19669190	359106.5	60.000 CAL	VV
gamma-Chlordane	3.929	3.928	21999071	392256.3	60.000 CAL	VV
alpha-Chlordane	4.049	4.049	21514254	394418.4	60.000 CAL	VV
DDE	4.119	4.119	39335748	343789.3	120.000 CAL	VV
Endosulfan I	4.185	4.184	22335156	419333.4	60.000 CAL	VV
Dieldrin	4.436	4.436	38444019	357645.0	120.000 CAL	VV
Endrin	4.711	4.709	35872535	343628.3	120.000 CAL	SV
DDD	4.801	4.801	32004845	268752.2	120.000 CAL	VS
Endosulfan II	5.004	5.003	38250446	367000.6	120.000 CAL	VS
DDT	5.199	5.197	35947724	312997.5	120.000 CAL	VS
Endrin aldehyde	5.661	5.659	33632664	326603.1	120.000 CAL	SS
Methoxychlor	6.103	6.101	69115031	164669.2	0.000 CAL	VV
Endosulfan Sulfate	6.519	6.517	42333328	409015.5	120.000 CAL	VS
Endrin Ketone	7.164	7.163	47435500	446868.0	120.000 CAL	BV
DCB	10.360	10.359	28603322	567820.8	60.000 CAL	BI

tm 01-21-16

GH

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2007 (60/120/600ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20023.dat
User: ESanto
Acquired: 01/20/16 23:01:59
Printed: 01/21/16 15:45:00



Channel B Signal
(ECD) Results

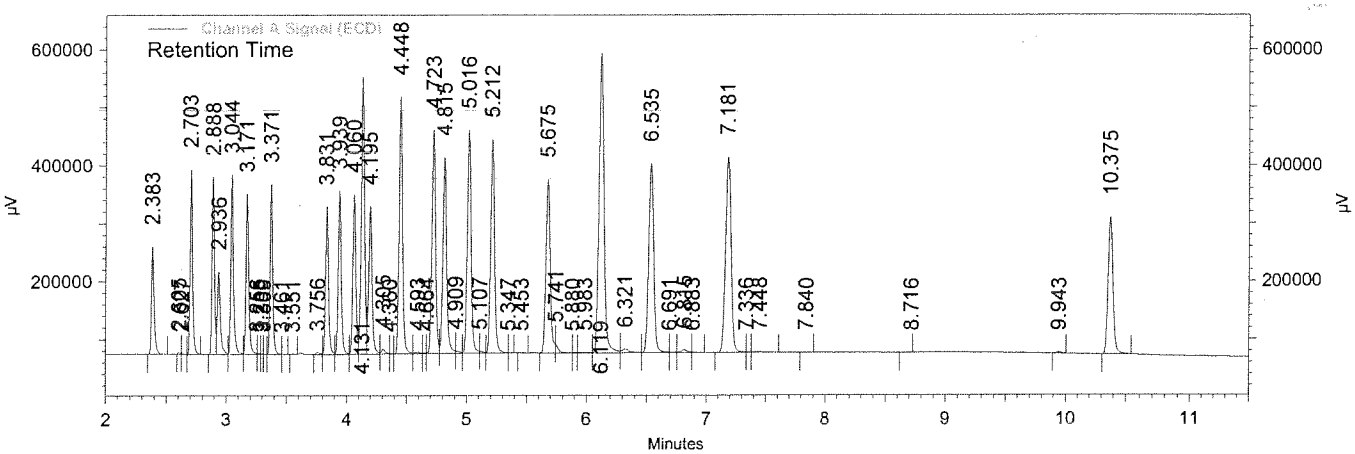
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.631	3057499	53703.4	60.000 CAL	SI
alpha-BHC	3.009	3.009	5001795	72036.4	60.000 CAL	BI
gamma-BHC	3.245	3.244	5164311	79373.3	60.000 CAL	SV
beta-BHC	3.292	3.292	2984270	51602.9	60.000 CAL	VV
delta-BHC	3.516	3.516	5371887	77332.0	60.000 CAL	VV
Heptachlor	3.579	3.579	5392004	87869.0	60.000 CAL	VI
Aldrin	3.863	3.863	6043601	103752.3	60.000 CAL	SS
Heptachlor Epoxide	4.449	4.449	5780252	97064.9	60.000 CAL	BS
gamma-Chlordane	4.680	4.680	6169034	102558.3	60.000 CAL	BV
alpha-Chlordane	4.877	4.877	6193197	101533.5	60.000 CAL	VV
Endosulfan I	4.968	4.968	6207701	105819.2	60.000 CAL	VV
DDE	5.109	5.111	12016380	95539.7	120.000 CAL	VS
Dieldrin	5.395	5.393	12145998	99969.4	120.000 CAL	VB
Endrin	5.951	5.951	11471436	99144.3	120.000 CAL	SV
DDD	6.192	6.193	8670000	66411.8	120.000 CAL	VV
Endosulfan II	6.401	6.401	12047582	103675.6	120.000 CAL	VS
DDT	6.953	6.955	9628557	74582.2	120.000 CAL	SS
Endrin Aldehyde	7.255	7.255	10757426	96524.7	120.000 CAL	SV
Endosulfan Sulfate	8.097	8.100	12768632	111570.2	120.000 CAL	BS
Methoxychlor	9.365	9.368	24342896	45652.3	0.000 CAL	SV
Endrin Ketone	9.825	9.829	14162410	123295.7	120.000 CAL	BB
DCB	12.132	12.137	7461244	145864.8	60.000 CAL	SI

PM 01-29-16

642

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2008 (80/160/800ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20024.dat
User: ESanto
Acquired: 01/20/16 23:22:22
Printed: 01/21/16 15:45:17



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.383	15235946	210406.3	80.000 CAL	BB
alpha-BHC	2.695	2.703	24648503	332088.1	80.000 CAL	BI
gamma-BHC	2.879	2.888	23273762	327031.5	80.000 CAL	BV
beta-BHC	2.927	2.936	12985318	191799.2	80.000 CAL	VV
delta-BHC	3.035	3.044	26535187	355796.5	80.000 CAL	VV
Heptachlor	3.163	3.171	23331232	340376.6	80.000 CAL	VS
Aldrin	3.363	3.371	24575998	354684.2	80.000 CAL	VS
Heptachlor Epoxide	3.821	3.831	23707234	359106.5	80.000 CAL	VV
gamma-Chlordane	3.929	3.939	26875117	392256.3	80.000 CAL	VV
alpha-Chlordane	4.049	4.060	26374150	394418.4	80.000 CAL	VV
DDE	4.119	4.131	49025538	343789.3	160.000 CAL	VV
Endosulfan I	4.185	4.195	27106853	419333.4	80.000 CAL	VV
Dieldrin	4.436	4.448	47015932	357645.0	160.000 CAL	VV
Endrin	4.711	4.723	43876090	343628.3	160.000 CAL	SV
DDD	4.801	4.815	40449324	268752.2	160.000 CAL	VS
Endosulfan II	5.004	5.016	47019627	367000.6	160.000 CAL	VS
DDT	5.199	5.212	45605622	312997.5	160.000 CAL	VS
Endrin aldehyde	5.661	5.675	41753534	326603.1	160.000 CAL	SS
Methoxychlor	6.103	6.119	84923271	164669.2	0.000 CAL	VV
Endosulfan Sulfate	6.519	6.535	52812556	409015.5	160.000 CAL	VS
Endrin Ketone	7.164	7.181	59086136	446868.0	160.000 CAL	BS
DCB	10.360	10.375	36194502	567820.8	80.000 CAL	BI

RL 01-29-16

643

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2008 (80/160/800ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20024.dat
User: ESanto
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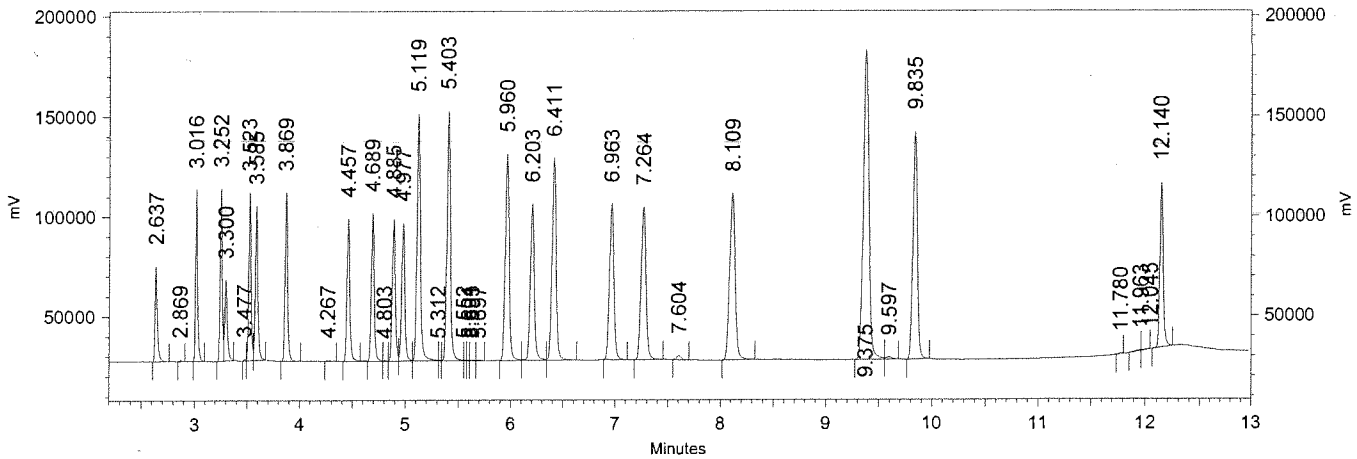
Printed: 01/21/16 15:45:17



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.637	3797220	53703.4	80.000 CAL	SI
alpha-BHC	3.009	3.016	6351878	72036.4	80.000 CAL	BI
gamma-BHC	3.245	3.252	6471149	79373.3	80.000 CAL	SV
beta-BHC	3.292	3.300	3604906	51602.9	80.000 CAL	VB
delta-BHC	3.516	3.523	6834673	77332.0	80.000 CAL	VV
Heptachlor	3.579	3.585	6675299	87869.0	80.000 CAL	VI
Aldrin	3.863	3.869	7465138	103752.3	80.000 CAL	SB
Heptachlor Epoxide	4.449	4.457	7261817	97064.9	80.000 CAL	BS
gamma-Chlordane	4.680	4.689	7836891	102558.3	80.000 CAL	VV
alpha-Chlordane	4.877	4.885	7834829	101533.5	80.000 CAL	VV
Endosulfan I	4.968	4.977	7831301	105819.2	80.000 CAL	VV
DDE	5.109	5.119	15436246	95539.7	160.000 CAL	VS
Dieldrin	5.395	5.403	15487128	99969.4	160.000 CAL	VS
Endrin	5.951	5.960	14441980	99144.3	160.000 CAL	BV
DDD	6.192	6.203	11419575	66411.8	160.000 CAL	VV
Endosulfan II	6.401	6.411	15365218	103675.6	160.000 CAL	VB
DDT	6.953	6.963	12637225	74582.2	160.000 CAL	BS
Endrin Aldehyde	7.255	7.264	13578518	96524.7	160.000 CAL	SB
Endosulfan Sulfate	8.097	8.109	16314422	111570.2	160.000 CAL	BS
Methoxychlor	9.365	9.375	31009613	45652.3	0.000 CAL	SV
Endrin Ketone	9.825	9.835	18219336	123295.7	160.000 CAL	BB
DCB	12.132	12.140	9496485	145864.8	80.000 CAL	II

ra
01-29-16

INITIAL CALIBRATION
METHOD EPA 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
LFID & Datetime: RA20035A 01/21/16 03:07
LFID & Datetime: RA20036A 01/21/16 03:27
LFID & Datetime: RA20037A 01/21/16 03:47
LFID & Datetime: RA20038A 01/21/16 04:07
LFID & Datetime: RA20039A 01/21/16 04:28
LFID & Datetime: RA20040A 01/21/16 04:48
LFID & Datetime: RA20041A 01/21/16 05:08
LFID & Datetime: RA20042A 01/21/16 05:28
CONC UNIT : ppb
Method Name : TOF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA or HEIGHT)/UNIT 1.00X	2.00X	5.00X	10.00X	15.00X	20.00X	30.00X	40.00X	MEAN	%RSD
Toxaphene	50.00	373097	370240	343257	334359	320937	323717	311931	302772	335038.6	7.7

TM 01-29-16

INITIAL CALIBRATION
METHOD EPA 8081

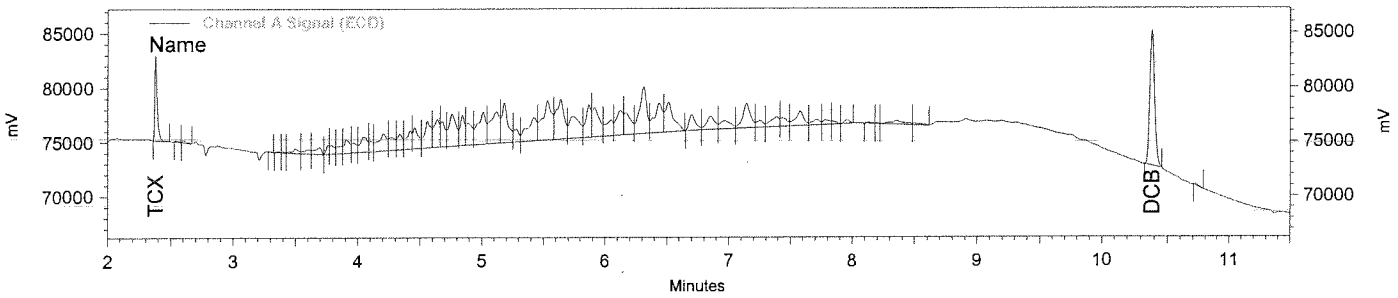
Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
LFID & Datetime: RA20035B 01/21/16 03:07
LFID & Datetime: RA20036B 01/21/16 03:27
LFID & Datetime: RA20037B 01/21/16 03:47
LFID & Datetime: RA20038B 01/21/16 04:07
LFID & Datetime: RA20039B 01/21/16 04:28
LFID & Datetime: RA20040B 01/21/16 04:48
LFID & Datetime: RA20041B 01/21/16 05:08
LFID & Datetime: RA20042B 01/21/16 05:28
CONC UNIT : ppb
Method Name : TOF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA or HEIGHT)/UNIT 1.00X	2.00X	5.00X	10.00X	15.00X	20.00X	30.00X	40.00X	MEAN	%RSD
Toxaphene	50.00	72395	67613	63706	63007	61016	63577	63375	62363	64631.4	5.7

JM 01-29-16

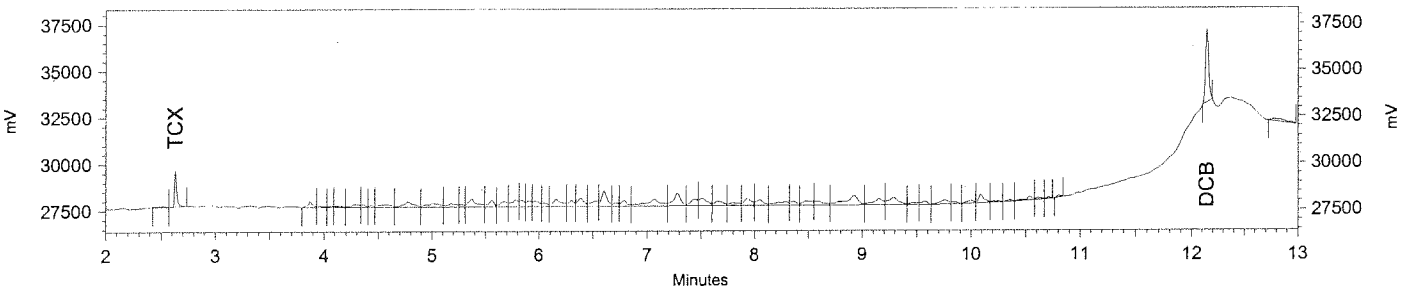
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2001 (50/2.5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20035.dat
User: ESanto
Acquired: 01/21/16 03:07:11
Printed: 01/25/16 18:22:43



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.379	582752	223052.9	2.50 CAL	BI
DCB	10.381	10.381	1689370	576095.1	2.50 CAL	BI
Toxaphene			18654862	335038.6	50.00 CAL	



Channel B Signal (ECD) Results

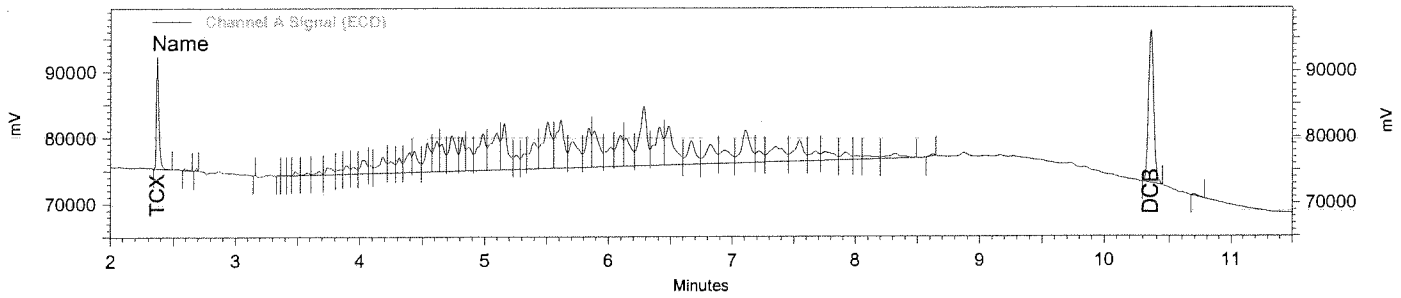
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.632	150301	53825.0	2.50 CAL	BI
DCB	12.143	12.143	437446	146761.8	2.50 CAL	II
Toxaphene			3619745	64631.4	50.00 CAL	

ka 01-24-16

647

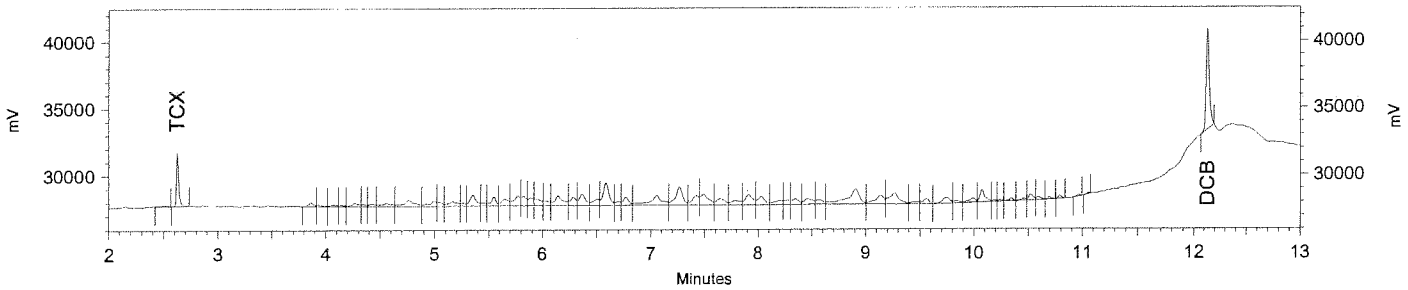
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2002 (100/5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20036.dat
User: ESanto
Acquired: 01/21/16 03:27:28
Printed: 01/25/16 18:23:21



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.369	1293049	223052.9	5.00 CAL	BI
DCB	10.381	10.355	3374930	576095.1	5.00 CAL	BI
Toxaphene			37024015	335038.6	100.00 CAL	



Channel B Signal (ECD) Results

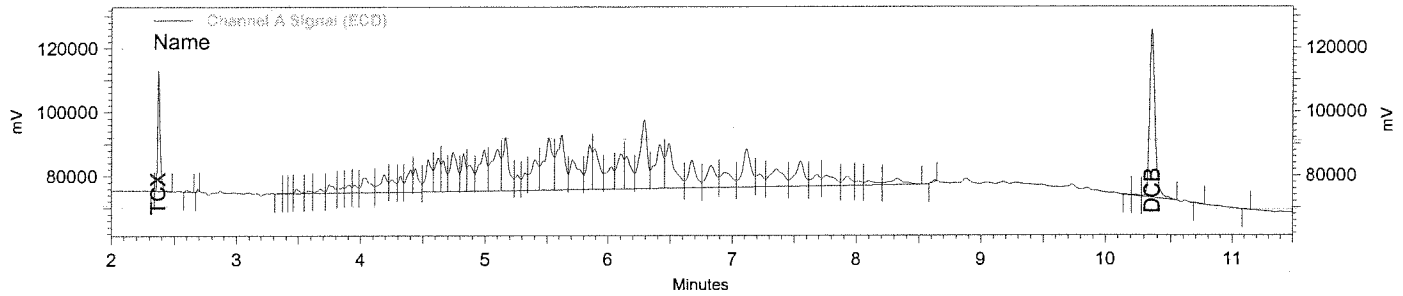
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.623	304923	53825.0	5.00 CAL	BI
DCB	12.143	12.131	861039	146761.8	5.00 CAL	II
Toxaphene			6761251	64631.4	100.00 CAL	

tm 01-29-16

646

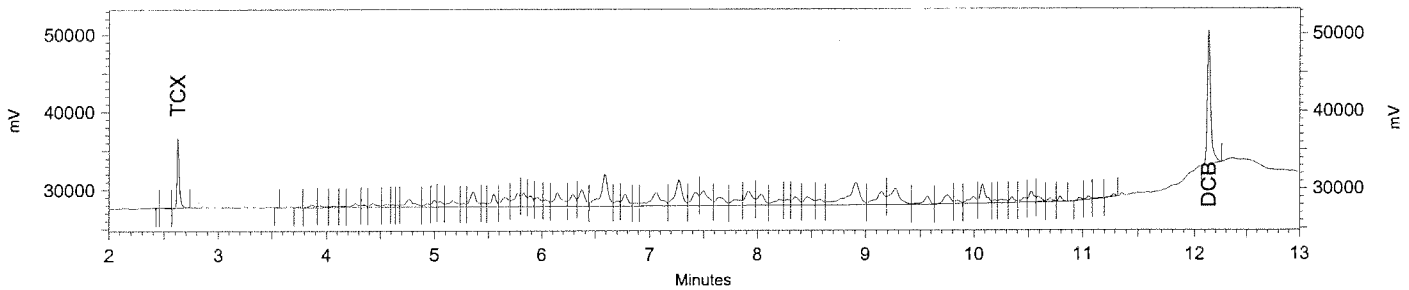
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2003 (250/12.5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20037.dat
User: ESanto
Acquired: 01/21/16 03:47:41
Printed: 01/25/16 18:23:39



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.369	2938058	223052.9	12.50 CAL	VI
DCB	10.381	10.359	8064630	576095.1	12.50 CAL	VI
Toxaphene			85814156	335038.6	250.00 CAL	



Channel B Signal (ECD) Results

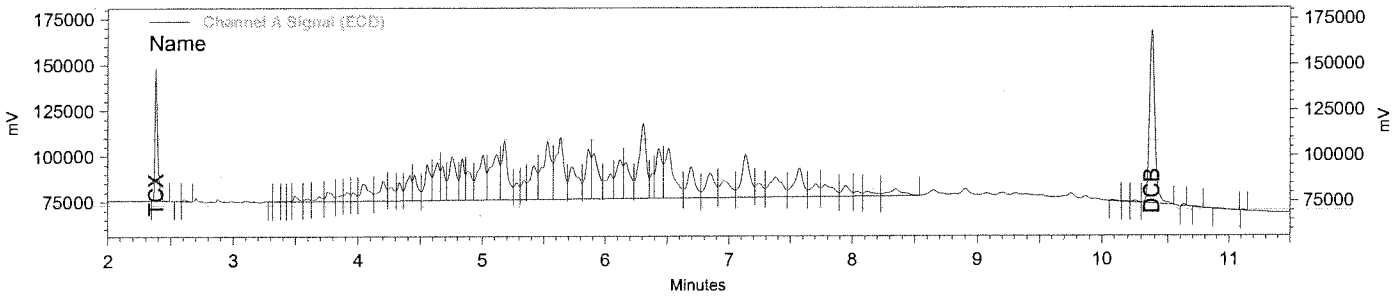
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.624	693864	53825.0	12.50 CAL	BI
DCB	12.143	12.135	2121599	146761.8	12.50 CAL	IB
Toxaphene			15926621	64631.4	250.00 CAL	

JM 01-29-16

645

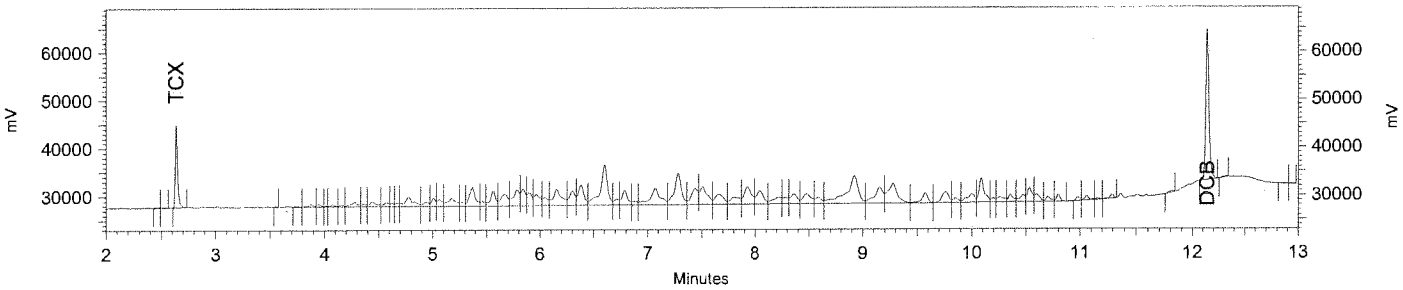
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2004 (500/25ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20038.dat
User: ESanto
Acquired: 01/21/16 04:07:57
Printed: 01/25/16 18:23:57



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.380	5783921	223052.9	25.00 CAL	BI
DCB	10.381	10.376	14648609	576095.1	25.00 CAL	VI
Toxaphene			167179248	335038.6	500.00 CAL	



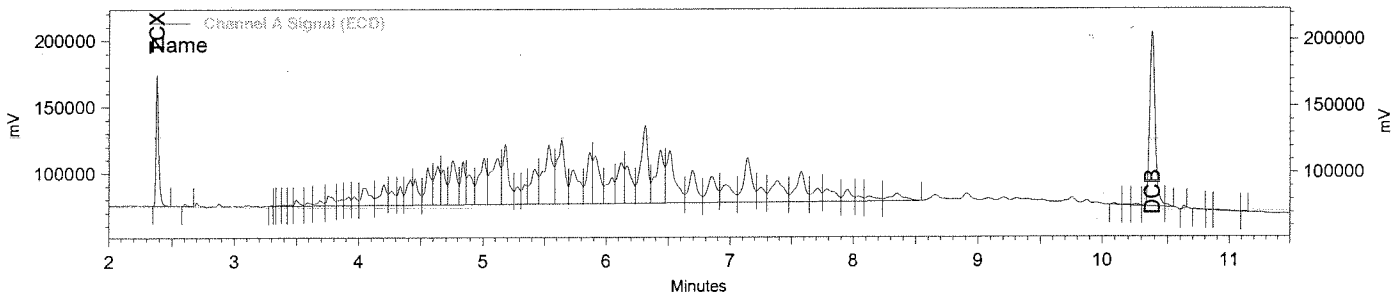
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.635	1337044	53825.0	25.00 CAL	BI
DCB	12.143	12.140	3634687	146761.8	25.00 CAL	IB
Toxaphene			31503573	64631.4	500.00 CAL	

01-29-16

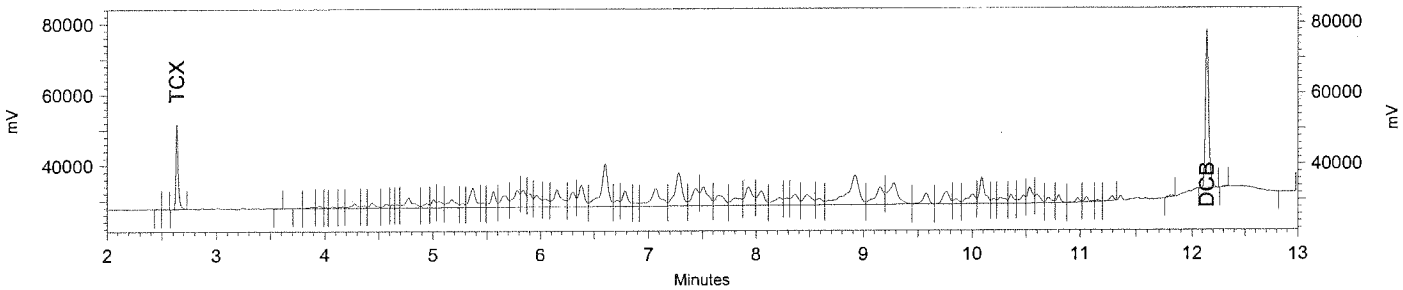
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2005 (750/37.5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20039.dat
User: ESanto
Acquired: 01/21/16 04:28:14
Printed: 01/25/16 18:24:15



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.380	7917819	223052.9	37.50 CAL	BI
DCB	10.381	10.381	20432642	576095.1	37.50 CAL	VV
Toxaphene			240702491	335038.6	750.00 CAL	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.633	1878129	53825.0	37.50 CAL	BI
DCB	12.143	12.140	5126243	146761.8	37.50 CAL	IB
Toxaphene			45761973	64631.4	750.00 CAL	

TM 01-29-16

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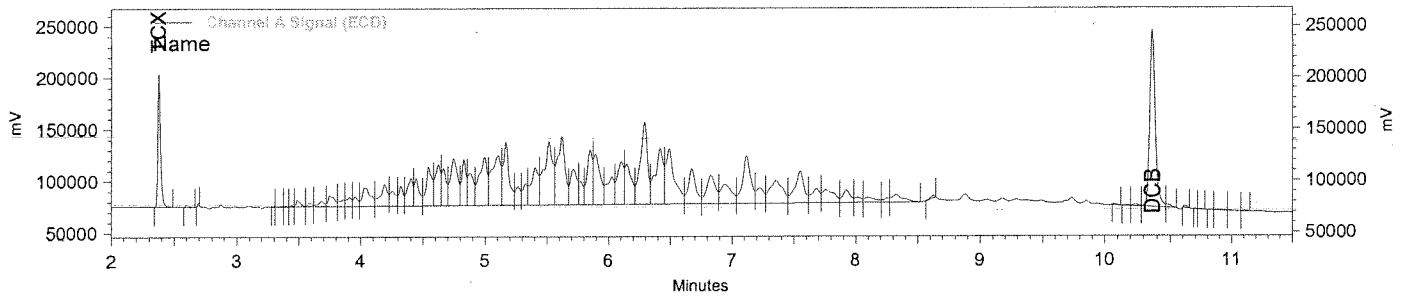
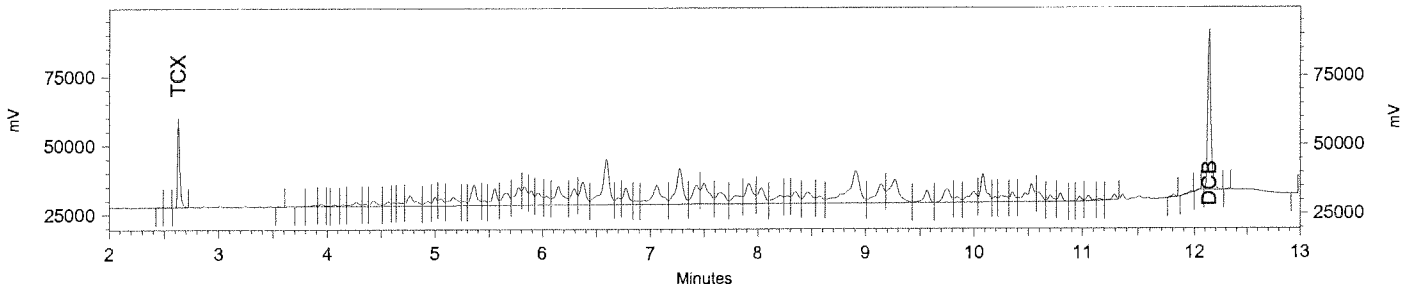
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2006 (1000/50ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20040.dat
User: ESanto
Acquired: 01/21/16 04:48:30
Printed: 01/25/16 18:24:31



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.375	10496067	223052.9	50.00 CAL	BI
DCB	10.381	10.363	26557590	576095.1	50.00 CAL	VV
Toxaphene			323717024	335038.6	1000.00 CAL	



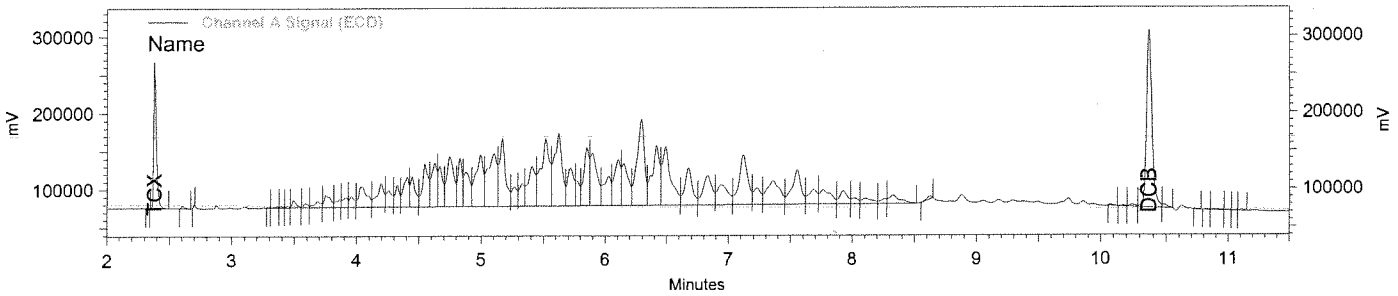
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.629	2557972	53825.0	50.00 CAL	BI
DCB	12.143	12.137	6706239	146761.8	50.00 CAL	BB
Toxaphene			63577214	64631.4	1000.00 CAL	

TM 01-29-16

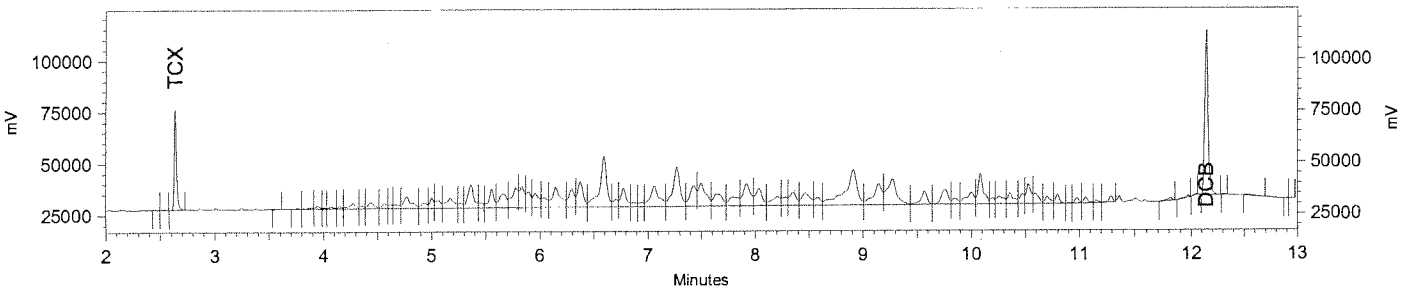
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2007 (1500/75ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20041.dat
User: ESanto
Acquired: 01/21/16 05:08:47
Printed: 01/25/16 18:24:48



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.379	15830708	223052.9	75.00 CAL	BI
DCB	10.381	10.364	36539580	576095.1	75.00 CAL	VV
Toxaphene			467896386	335038.6	1500.00 CAL	



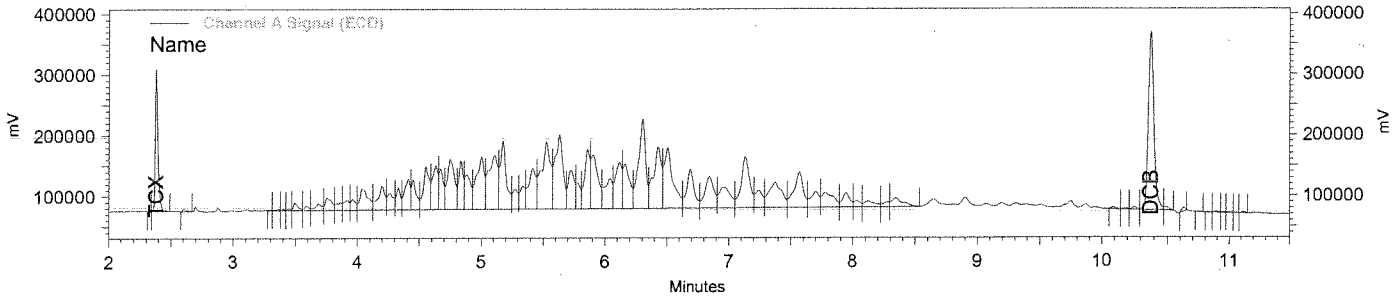
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.633	3852169	53825.0	75.00 CAL	BI
DCB	12.143	12.140	9239618	146761.8	75.00 CAL	BB
Toxaphene			95062185	64631.4	1500.00 CAL	

TM 01-29-16

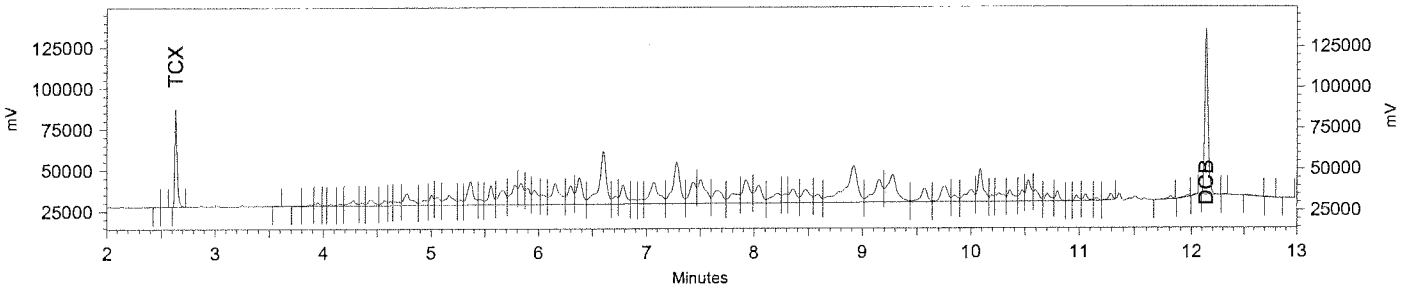
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2008 (2000/100ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20042.dat
User: ESanto
Acquired: 01/21/16 05:28:59
Printed: 01/25/16 18:25:04



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.379	19417153	223052.9	100.00 CAL	BI
DCB	10.381	10.375	46369565	576095.1	100.00 CAL	VV
Toxaphene			605543871	335038.6	2000.00 CAL	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.633	4789867	53825.0	100.00 CAL	BI
DCB	12.143	12.137	11777353	146761.8	100.00 CAL	BB
Toxaphene			124725141	64631.4	2000.00 CAL	

01-29-16

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20021A 01/20/2016 22:21
Mid Conc Init LFID & Datetime: RA20029A 01/21/2016 01:04
Conc Cont LFID & Datetime: RA20033A 01/21/2016 02:26
Conc Cont LFID & Datetime: RA20034A 01/21/2016 02:46
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	2.691	2.671	2.711	20.0	332088.0	7258078	21.86	9		20
gamma-BHC	2.876	2.854	2.898	20.0	327031.5	6812417	20.83	4		20
beta-BHC	2.925	2.903	2.947	20.0	191799.2	4062227	21.18	6		20
delta-BHC	3.033	3.012	3.054	20.0	355796.5	7533059	21.17	6		20
Heptachlor	3.160	3.136	3.184	20.0	340376.6	6928687	20.36	2		20
Aldrin	3.360	3.334	3.386	20.0	354684.2	7363811	20.76	4		20
Heptachlor Epoxide	3.820	3.790	3.850	20.0	359106.5	7371310	20.53	3		20
gamma-Chlordane	3.928	3.896	3.960	20.0	392256.3	8095638	20.64	3		20
alpha-Chlordane	4.049	4.017	4.081	20.0	394418.4	8136729	20.63	3		20
DDE	4.121	4.089	4.153	20.0	343789.3	7359837	21.41	7		20
Endosulfan I	4.185	4.150	4.220	20.0	419333.4	8381780	19.99	-0		20
Dieldrin	4.437	4.405	4.469	20.0	357644.9	7857519	21.97	10		20
Endrin	4.711	4.681	4.741	20.0	343628.3	7551501	21.98	10		20
DDD	4.807	4.777	4.837	20.0	268752.2	5636015	20.97	5		20
Endosulfan II	5.007	4.978	5.036	20.0	367000.6	8062502	21.97	10		20
DDT	5.203	5.173	5.233	20.0	312997.5	7151008	22.85	14		20
Endrin Aldehyde	5.664	5.632	5.696	20.0	326603.0	7407168	22.68	13		20
Methoxychlor	6.111	6.073	6.149	200.0	164669.2	30021332	225.40	13		20
Endosulfan Sulfate	6.524	6.488	6.560	20.0	409015.5	9068241	22.17	11		20
Endrin Ketone	7.169	7.133	7.205	20.0	446867.9	9681898	21.67	8		20
Oxychlordane	3.747	3.728	3.766	20.0	341147.6	6674858	19.57	-2		20
2,4'-DDE	3.819	3.797	3.841	20.0	267781.1	5209041	19.45	-3		20
trans-Nonachlor	4.044	4.021	4.067	20.0	478254.9	8156155	17.05	-15		20
2,4'-DDD	4.312	4.287	4.337	20.0	231392.7	4411067	19.06	-5		20
2,4'-DDT	4.599	4.576	4.622	20.0	274849.4	5741374	20.89	4		20
cis-Nonachlor	4.767	4.745	4.789	20.0	523874.0	9182146	17.53	-12		20
Mirex	6.272	6.244	6.300	20.0	459085.4	8484384	18.48	-8		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.372	2.352	2.392	20.0	210406.3	4494975	21.36	7		20
DCB	10.361	10.311	10.411	20.0	567820.8	11299030	19.90	-1		20

RK 01-29-16

INITIAL CALIBRATION VERIFICATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20021B 01/20/2016 22:21
Mid Conc Init LFID & Datetime: RA20029B 01/21/2016 01:04
Conc Cont LFID & Datetime: RA20033B 01/21/2016 02:26
Conc Cont LFID & Datetime: RA20034B 01/21/2016 02:46
CONC UNIT : ppb

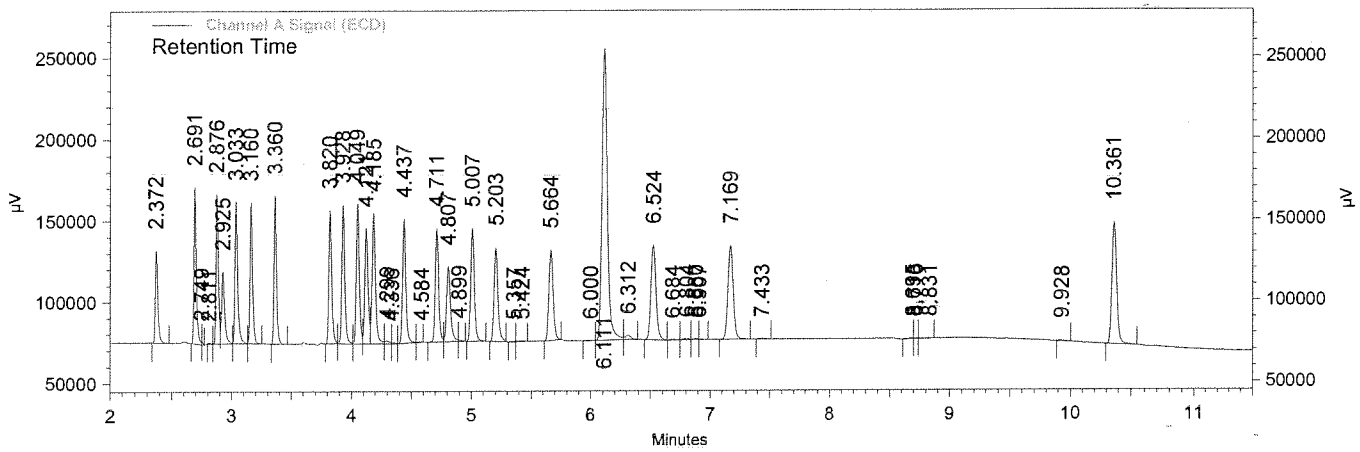
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	3.005	2.987	3.023	20.0	72036.4	1547166	21.48	7		20
gamma-BHC	3.241	3.224	3.258	20.0	79373.3	1590255	20.03	0		20
beta-BHC	3.289	3.272	3.306	20.0	51602.9	1055909	20.46	2		20
delta-BHC	3.513	3.496	3.530	20.0	77332.0	1594987	20.63	3		20
Heptachlor	3.576	3.558	3.594	20.0	87869.0	1809655	20.59	3		20
Aldrin	3.860	3.841	3.879	20.0	103752.3	1987659	19.16	-4		20
Heptachlor Epoxide	4.447	4.424	4.470	20.0	97064.9	1977125	20.37	2		20
gamma-Chlordane	4.679	4.658	4.700	20.0	102558.3	2057164	20.06	0		20
alpha-Chlordane	4.876	4.858	4.894	20.0	101533.5	2084417	20.53	3		20
DDE	5.112	5.096	5.128	20.0	95539.7	1933039	20.23	1		20
Endosulfan I	4.967	4.948	4.986	20.0	105819.2	2091571	19.77	-1		20
Dieldrin	5.393	5.376	5.410	20.0	99969.4	2013495	20.14	1		20
Endrin	5.951	5.931	5.971	20.0	99144.3	2051865	20.70	3		20
DDD	6.196	6.177	6.215	20.0	66411.8	1323662	19.93	-0		20
Endosulfan II	6.401	6.379	6.423	20.0	103675.6	2211777	21.33	7		20
DDT	6.956	6.932	6.980	20.0	74582.2	1542471	20.68	3		20
Endrin Aldehyde	7.257	7.235	7.279	20.0	96524.7	2133114	22.10	10		20
Methoxychlor	9.371	9.343	9.399	200.0	45652.3	9072734	213.40	7		20
Endosulfan Sulfate	8.103	8.079	8.127	20.0	111570.2	2386884	21.39	7		20
Endrin Ketone	9.828	9.798	9.858	20.0	123295.7	2541221	20.61	3		20
Oxychlordane	4.349	4.329	4.369	20.0	98949.8	1925353	19.46	-3		20
2,4'-DDE	4.676	4.655	4.697	20.0	72355.1	1381799	19.10	-5		20
trans-Nonachlor	4.808	4.790	4.826	20.0	132451.0	2239467	16.91	-15		20
2,4'-DDD	5.459	5.441	5.477	20.0	59135.7	1129042	19.09	-5		20
2,4'-DDT	6.043	6.024	6.062	20.0	61923.8	1354828	21.88	9		20
cis-Nonachlor	6.128	6.110	6.146	20.0	138591.9	2496924	18.02	-10		20
Mirex	9.645	9.621	9.669	20.0	128349.0	2462911	19.19	-4		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.627	2.604	2.650	20.0	53703.4	1107522	20.62	3		20
DCB	12.133	12.098	12.168	20.0	145864.8	2981388	20.44	2		20

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: ICPF9A2001 (20/200ppb PEST ICV)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20033.dat
User: ESanto
Acquired: 01/21/16 02:26:22
Printed: 01/21/16 15:53:28



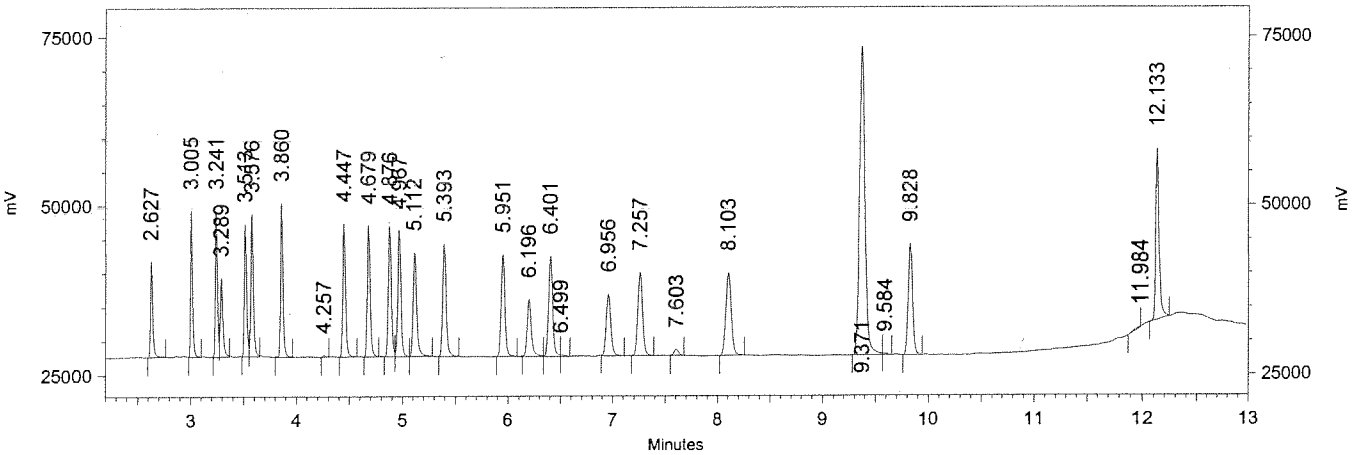
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.372	4494975	210406.3	21.363	BB
alpha-BHC	2.695	2.691	7258078	332088.1	21.856	BS
gamma-BHC	2.879	2.876	6812417	327031.5	20.831	VV
beta-BHC	2.927	2.925	4062227	191799.2	21.180	VV
delta-BHC	3.035	3.033	7533059	355796.5	21.172	VV
Heptachlor	3.163	3.160	6928687	340376.6	20.356	VB
Aldrin	3.363	3.360	7363811	354684.2	20.762	BB
Heptachlor Epoxide	3.821	3.820	7371310	359106.5	20.527	BV
gamma-Chlordane	3.929	3.928	8095638	392256.3	20.639	VV
alpha-Chlordane	4.049	4.049	8136729	394418.4	20.630	VV
DDE	4.119	4.121	7359837	343789.3	21.408	VV
Endosulfan I	4.185	4.185	8381780	419333.4	19.988	VV
Dieldrin	4.436	4.437	7857519	357645.0	21.970	BV
Endrin	4.711	4.711	7551501	343628.3	21.976	BV
DDD	4.801	4.807	5636015	268752.2	20.971	VS
Endosulfan II	5.004	5.007	8062502	367000.6	21.969	II
DDT	5.199	5.203	7151008	312997.5	22.847	II
Endrin aldehyde	5.661	5.664	7407168	326603.1	22.679	BI
Methoxychlor	6.103	6.111	30021333	164669.2	225.398	SV
Endosulfan Sulfate	6.519	6.524	9068241	409015.5	22.171	BB
Endrin Ketone	7.164	7.169	9681898	446868.0	21.666	BB
DCB	10.360	10.361	11299030	567820.8	19.899	BI

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: ICPF9A2001 (20/200ppb PEST ICV)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20033.dat
User: ESanto
Acquired: 01/21/16 02:26:22
Printed: 01/21/16 15:53:28



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.627	1107522	53703.4	20.623	SI
alpha-BHC	3.009	3.005	1547166	72036.4	21.478	BB
gamma-BHC	3.245	3.241	1590255	79373.3	20.035	SV
beta-BHC	3.292	3.289	1055909	51602.9	20.462	VB
delta-BHC	3.516	3.513	1594987	77332.0	20.625	BV
Heptachlor	3.579	3.576	1809655	87869.0	20.595	VS
Aldrin	3.863	3.860	1987659	103752.3	19.158	BS
Heptachlor Epoxide	4.449	4.447	1977125	97064.9	20.369	SB
gamma-Chlordane	4.680	4.679	2057164	102558.3	20.058	BV
alpha-Chlordane	4.877	4.876	2084417	101533.5	20.529	VV
Endosulfan I	4.968	4.967	2091571	105819.2	19.766	VV
DDE	5.109	5.112	1933039	95539.7	20.233	VB
Dieldrin	5.395	5.393	2013495	99969.4	20.141	BB
Endrin	5.951	5.951	2051865	99144.3	20.696	BV
DDD	6.192	6.196	1323662	66411.8	19.931	SV
Endosulfan II	6.401	6.401	2211777	103675.6	21.334	VS
DDT	6.953	6.956	1542471	74582.2	20.681	SB
Endrin Aldehyde	7.255	7.257	2133114	96524.7	22.099	SB
Endosulfan Sulfate	8.097	8.103	2386884	111570.2	21.394	BB
Methoxychlor	9.365	9.371	9072734	45652.3	213.396	BV
Endrin Ketone	9.825	9.828	2541221	123295.7	20.611	SB
DCB	12.132	12.133	2981388	145864.8	20.439	II

TR 01-29-16

INITIAL CALIBRATION VERIFICATION
METHOD EPA 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20038A 01/21/2016 04:07
Conc Cont LFID & Datetime: RA20043A 01/21/2016 05:49
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	335038.6	177492544	529.77	6		20

KU
01-29-16

INITIAL CALIBRATION VERIFICATION
METHOD EPA 8081

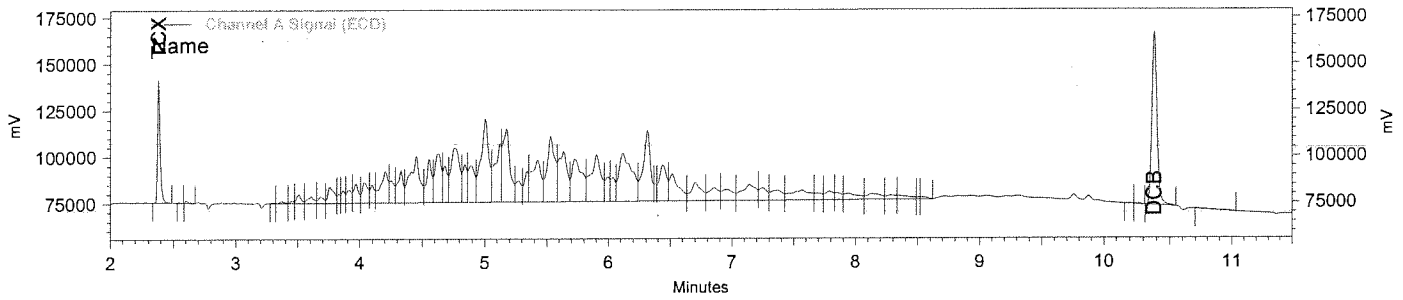
Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20038B 01/21/2016 04:07
Conc Cont LFID & Datetime: RA20043B 01/21/2016 05:49
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	64631.4	35005520	541.62	8		20

AL 01-29-16

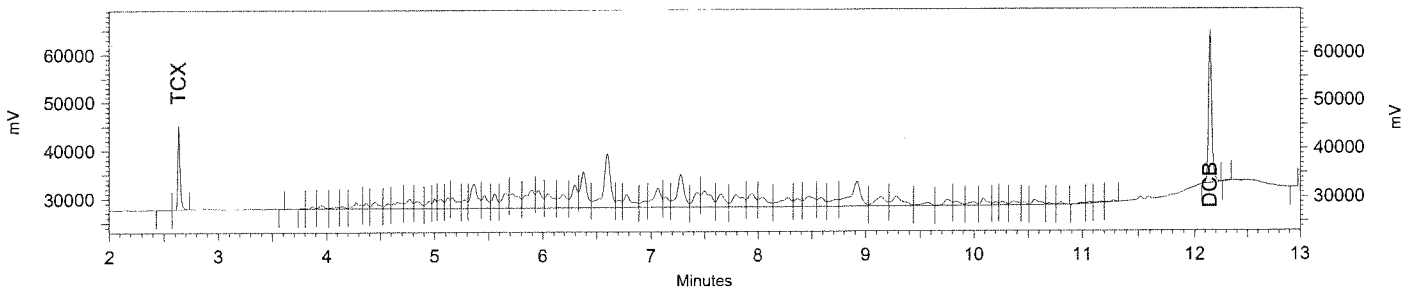
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: ITOF9A2001 (500/25ppb TOXA ICV)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20043.dat
User: ESanto
Acquired: 01/21/16 05:49:11
Printed: 01/25/16 18:25:24



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.380	5240393	223052.9	23.49	BI
DCB	10.381	10.380	13984645	576095.1	24.27	BI
Toxaphene			177492545	335038.6	529.77	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.632	1366931	53825.0	25.40	BI
DCB	12.143	12.143	3643568	146761.8	24.83	IB
Toxaphene			35005522	64631.4	541.62	

RO 01-29-16

DAILY CALIBRATIONS

PEM PEST BREAKDOWN CALCULATION
METHOD 8081

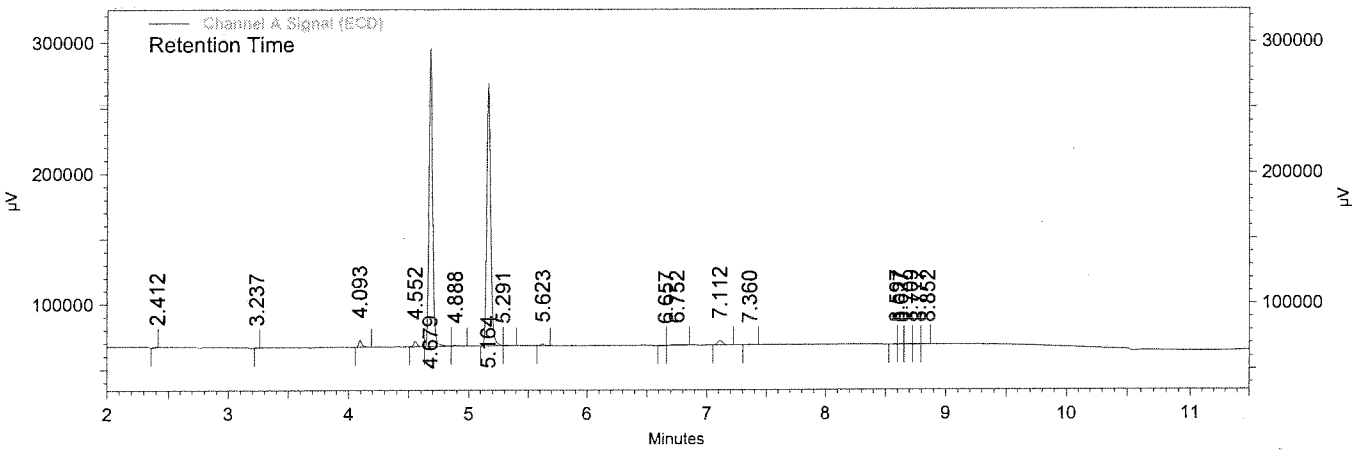
Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.32UM 30MX0.32MMIDX0.25UM
PEM LFID & Datetime : RB19027A RB19027B 02/19/16 21:01

Base on AREA

	AREA				% Breakdown				
LFID	DDD	DDE	DDT	TOTAL	DDD	DDE	TOTAL	QL	QCLIMIT
RB19027A	0.0	531889.0	24955012.0	25486900.0	0.00	2.09	2.09		15
RB19027B	0.0	143838.0	7923088.0	8066926.0	0.00	1.78	1.78		15
LFID	ENDRIN	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	QL	QCLIMIT
RB19027A	25756328.0	189808.0	536292.0	26482428.0	0.72	2.03	2.74		15
RB19027B	9597264.0	51105.0	187560.0	9835929.0	0.52	1.91	2.43		15

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19027.dat
User: ESanto
Acquired: 02/19/16 21:01:30
Printed: 02/22/16 14:28:47

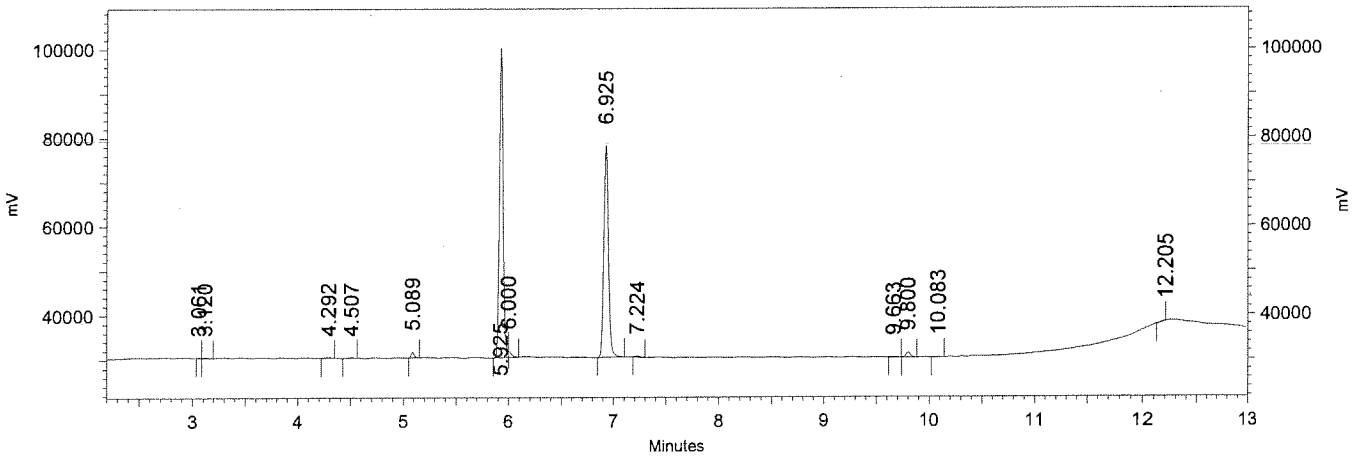


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.371				0.000 BDL	
alpha-BHC	2.688				0.000 BDL	
gamma-BHC	2.872				0.000 BDL	
beta-BHC	2.920				0.000 BDL	
delta-BHC	3.028				0.000 BDL	
Heptachlor	3.153				0.000 BDL	
Aldrin	3.352				0.000 BDL	
Heptachlor Epoxide	3.807				0.000 BDL	
gamma-Chlordane	3.913				0.000 BDL	
alpha-Chlordane	4.033				0.000 BDL	
DDE	4.103	4.093	531889	343789.3	1.547	BS
Endosulfan I	4.167				0.000 BDL	
Dieldrin	4.417				0.000 BDL	
Endrin	4.689	4.679	25756327	343628.3	74.954	VV
DDD	4.780				0.000 BDL	
Endosulfan II	4.980				0.000 BDL	
DDT	5.173	5.164	24955011	312997.5	79.729	SS
Endrin aldehyde	5.632	5.623	189808	326603.1	0.581	BS
Methoxychlor	6.069				0.000 BDL	
Endosulfan Sulfate	6.483				0.000 BDL	
Endrin Ketone	7.123	7.112	536292	446868.0	1.200	BB
DCB	10.329				0.000 BDL	

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19027.dat
User: ESanto
Acquired: 02/19/16 21:01:30
Printed: 02/22/16 14:28:47



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.627				0.000 BDL	
alpha-BHC	3.004				0.000 BDL	
gamma-BHC	3.237				0.000 BDL	
beta-BHC	3.285				0.000 BDL	
delta-BHC	3.508				0.000 BDL	
Heptachlor	3.569				0.000 BDL	
Aldrin	3.852				0.000 BDL	
Heptachlor Epoxide	4.435				0.000 BDL	
gamma-Chlordane	4.665				0.000 BDL	
alpha-Chlordane	4.861				0.000 BDL	
Endosulfan I	4.952				0.000 BDL	
DDE	5.093	5.089	143838	95539.7	1.506	SB
Dieldrin	5.375				0.000 BDL	
Endrin	5.929	5.925	9597264	99144.3	96.801	SS
DDD	6.171				0.000 BDL	
Endosulfan II	6.377				0.000 BDL	
DDT	6.927	6.925	7923088	74582.2	106.233	BS
Endrin Aldehyde	7.225	7.224	51105	96524.7	0.529	BB
Endosulfan Sulfate	8.065				0.000 BDL	
Methoxychlor	9.337				0.000 BDL	
Endrin Ketone	9.803	9.800	187560	123295.7	1.521	BB
DCB	12.124				0.000 BDL	

CONTINUE CALIBRATION
METHOD 8081

Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20021A 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19028A 02/19/2016 21:21
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	2.683	2.663	2.703	20.0	332088.0	6138868	18.49	-8		20
gamma-BHC	2.867	2.845	2.889	20.0	327031.5	6038179	18.46	-8		20
beta-BHC	2.916	2.894	2.938	20.0	191799.2	3480612	18.15	-9		20
delta-BHC	3.023	3.002	3.044	20.0	355796.5	6611133	18.58	-7		20
Heptachlor	3.148	3.124	3.172	20.0	340376.6	5932430	17.43	-13		20
Aldrin	3.345	3.319	3.371	20.0	354684.2	6324420	17.83	-11		20
Heptachlor Epoxide	3.803	3.773	3.833	20.0	359106.5	6832346	19.03	-5		20
gamma-Chlordane	3.908	3.876	3.940	20.0	392256.3	7284997	18.57	-7		20
alpha-Chlordane	4.029	3.997	4.061	20.0	394418.4	7075358	17.94	-10		20
DDE	4.099	4.067	4.131	40.0	343789.3	12659721	36.82	-8		20
Endosulfan I	4.163	4.128	4.198	20.0	419333.4	7432807	17.73	-11		20
Dieldrin	4.412	4.380	4.444	40.0	357644.9	13016335	36.40	-9		20
Endrin	4.684	4.654	4.714	40.0	343628.3	12098995	35.21	-12		20
DDD	4.776	4.746	4.806	40.0	268752.2	9950965	37.03	-7		20
Endosulfan II	4.976	4.947	5.005	40.0	367000.6	12865855	35.06	-12		20
DDT	5.169	5.139	5.199	40.0	312997.5	11224968	35.86	-10		20
Endrin Aldehyde	5.628	5.596	5.660	40.0	326603.0	11128768	34.07	-15		20
Methoxychlor	6.065	6.027	6.103	200.0	164669.2	25992480	192.29	-4		20
Endosulfan Sulfate	6.480	6.444	6.516	40.0	409015.5	14132137	34.55	-14		20
Endrin Ketone	7.123	7.087	7.159	40.0	446867.9	15627841	34.97	-13		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.365	2.345	2.385	20.0	210406.3	3890812	18.49	-8		20
DCB	10.328	10.278	10.378	20.0	567820.8	9540775	16.80	-16		20

CONTINUE CALIBRATION
METHOD 8081

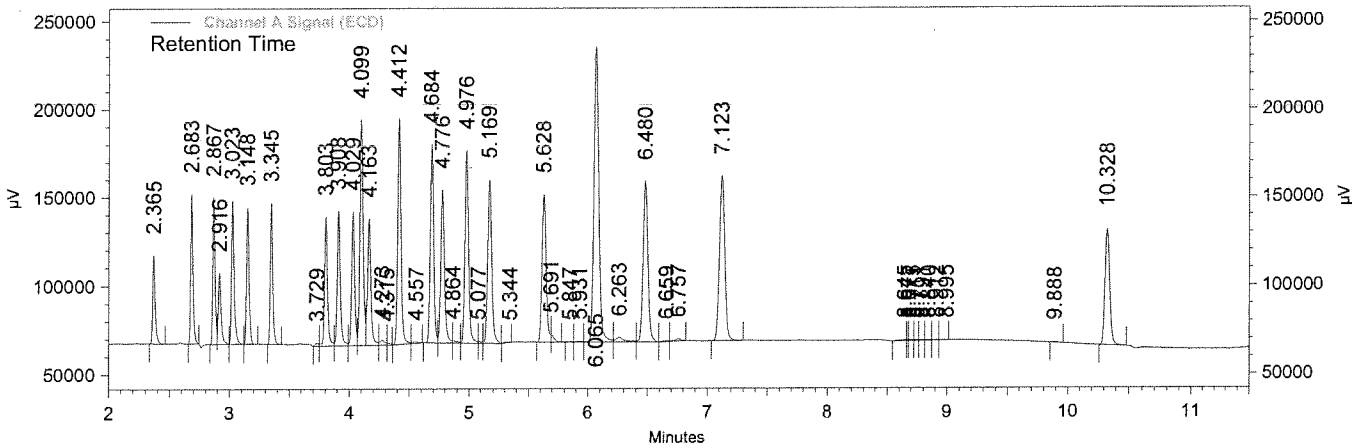
Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20021B 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19028B 02/19/2016 21:21
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	3.000	2.982	3.018	20.0	72036.4	1730890	24.03	20		20
gamma-BHC	3.233	3.216	3.250	20.0	79373.3	1848809	23.29	16		20
beta-BHC	3.283	3.266	3.300	20.0	51602.9	1157144	22.42	12		20
delta-BHC	3.505	3.488	3.522	20.0	77332.0	1826827	23.62	18		20
Heptachlor	3.567	3.549	3.585	20.0	87869.0	1921492	21.87	9		20
Aldrin	3.849	3.830	3.868	20.0	103752.3	2178252	21.00	5		20
Heptachlor Epoxide	4.433	4.410	4.456	20.0	97064.9	2112608	21.76	9		20
gamma-Chlordane	4.664	4.643	4.685	20.0	102558.3	2194554	21.40	7		20
alpha-Chlordane	4.861	4.843	4.879	20.0	101533.5	2181241	21.48	7		20
DDE	5.093	5.077	5.109	40.0	95539.7	4203136	43.99	10		20
Endosulfan I	4.951	4.932	4.970	20.0	105819.2	2246246	21.23	6		20
Dieldrin	5.375	5.358	5.392	40.0	99969.4	4398793	44.00	10		20
Endrin	5.929	5.909	5.949	40.0	99144.3	4280542	43.17	8		20
DDD	6.172	6.153	6.191	40.0	66411.8	3039098	45.76	14		20
Endosulfan II	6.379	6.357	6.401	40.0	103675.6	4417291	42.61	7		20
DDT	6.931	6.907	6.955	40.0	74582.2	3185033	42.71	7		20
Endrin Aldehyde	7.229	7.207	7.251	40.0	96524.7	3922959	40.64	2		20
Methoxychlor	9.343	9.315	9.371	200.0	45652.3	9398253	221.33	11		20
Endosulfan Sulfate	8.071	8.047	8.095	40.0	111570.2	4617011	41.38	3		20
Endrin Ketone	9.807	9.777	9.837	40.0	123295.7	5256716	42.63	7		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.623	2.600	2.646	20.0	53703.4	1203421	22.41	12		20
DCB	12.123	12.088	12.158	20.0	145864.8	2738626	18.77	-6		20

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19028.dat
User: ESanto
Acquired: 02/19/16 21:21:57
Printed: 02/22/16 14:30:31



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.365	3890812	210406.3	18.492	BB
alpha-BHC	2.683	2.683	6138868	332088.1	18.486	BI
gamma-BHC	2.867	2.867	6038179	327031.5	18.464	BV
beta-BHC	2.916	2.916	3480612	191799.2	18.147	VV
delta-BHC	3.023	3.023	6611133	355796.5	18.581	VB
Heptachlor	3.148	3.148	5932430	340376.6	17.429	BB
Aldrin	3.345	3.345	6324420	354684.2	17.831	BS
Heptachlor Epoxide	3.803	3.803	6832346	359106.5	19.026	SV
gamma-Chlordane	3.908	3.908	7284997	392256.3	18.572	VV
alpha-Chlordane	4.029	4.029	7075358	394418.4	17.939	VV
DDE	4.099	4.099	12659721	343789.3	36.824	VV
Endosulfan I	4.163	4.163	7432807	419333.4	17.725	VV
Dieldrin	4.412	4.412	13016335	357645.0	36.395	BV
Endrin	4.684	4.684	12098995	343628.3	35.210	BV
DDD	4.776	4.776	9950965	268752.2	37.027	VS
Endosulfan II	4.976	4.976	12865855	367000.6	35.057	VS
DDT	5.169	5.169	11224968	312997.5	35.863	VB
Endrin aldehyde	5.628	5.628	11128768	326603.1	34.074	SS
Methoxychlor	6.065	6.065	25992481	164669.2	192.294	SV
Endosulfan Sulfate	6.480	6.480	14132137	409015.5	34.552	VB
Endrin Ketone	7.123	7.123	15627841	446868.0	34.972	BB
DCB	10.328	10.328	9540775	567820.8	16.802	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19028.dat
User: ESanto
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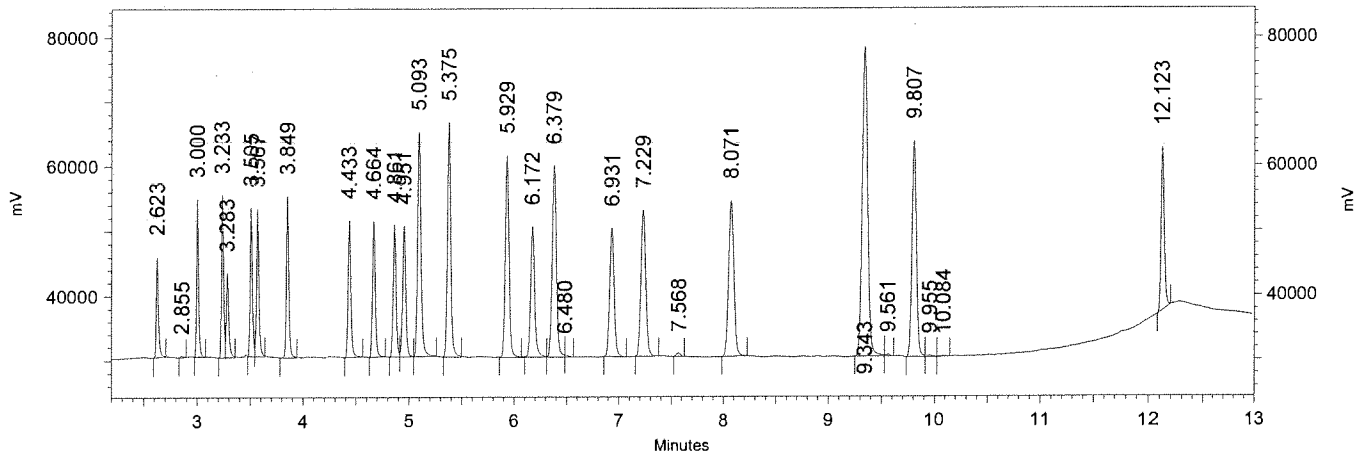


Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.623	1203421	53703.4	22.409	SI
alpha-BHC	3.000	3.000	1730890	72036.4	24.028	II
gamma-BHC	3.233	3.233	1848809	79373.3	23.293	BV
beta-BHC	3.283	3.283	1157144	51602.9	22.424	VB
delta-BHC	3.505	3.505	1826827	77332.0	23.623	BV
Heptachlor	3.567	3.567	1921492	87869.0	21.868	VS
Aldrin	3.849	3.849	2178252	103752.3	20.995	BS
Heptachlor Epoxide	4.433	4.433	2112608	97064.9	21.765	BS
gamma-Chlordane	4.664	4.664	2194554	102558.3	21.398	BB
alpha-Chlordane	4.861	4.861	2181241	101533.5	21.483	BV
Endosulfan I	4.951	4.951	2246246	105819.2	21.227	VB
DDE	5.093	5.093	4203136	95539.7	43.994	BS
Dieldrin	5.375	5.375	4398793	99969.4	44.001	BS
Endrin	5.929	5.929	4280542	99144.3	43.175	SV
DDD	6.172	6.172	3039098	66411.8	45.761	SV
Endosulfan II	6.379	6.379	4417291	103675.6	42.607	VS
DDT	6.931	6.931	3185033	74582.2	42.705	SS
Endrin Aldehyde	7.229	7.229	3922959	96524.7	40.642	BB
Endosulfan Sulfate	8.071	8.071	4617011	111570.2	41.382	BS
Methoxychlor	9.343	9.343	9398253	45652.3	221.329	BV
Endrin Ketone	9.807	9.807	5256716	123295.7	42.635	SV
DCB	12.123	12.123	2738626	145864.8	18.775	SB

CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20038A 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19029A 02/19/2016 21:42
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	335038.6	137448976	410.25	-18		20

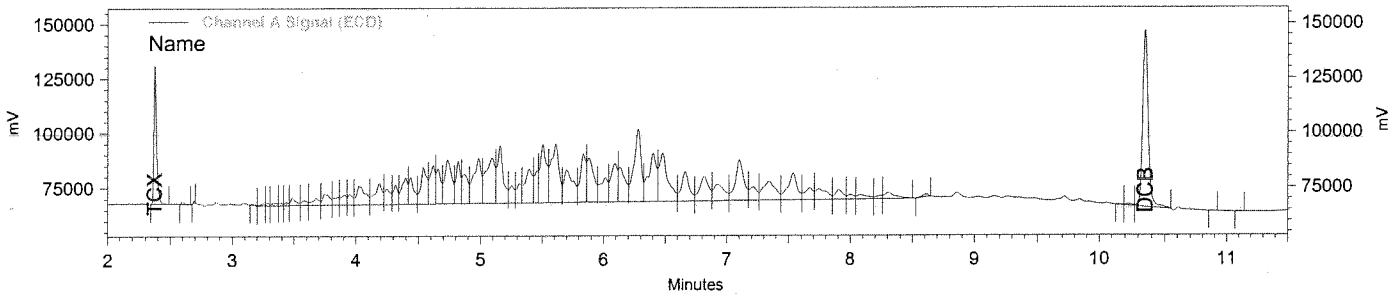
CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20038B 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19029B 02/19/2016 21:42
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	64631.4	31417328	486.10	-3		20

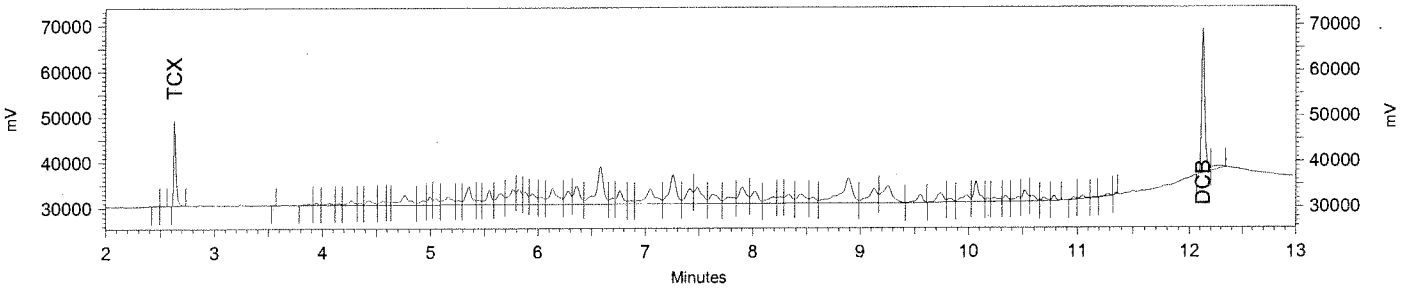
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CTOF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19029.dat
User: ESanto
Acquired: 02/19/16 21:42:27
Printed: 02/22/16 16:19:25



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.375	5004306	223052.9	22.44	BI
DCB	10.381	10.351	12595179	576095.1	21.86	VI
Toxaphene			137448972	335038.6	410.25	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.631	1469120	53825.0	27.29	BI
DCB	12.143	12.127	3564031	146761.8	24.28	IV
Toxaphene			31417329	64631.4	486.10	

CONTINUE CALIBRATION
METHOD 8081

Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20021A 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19039A 02/20/2016 01:06
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	2.688	2.668	2.708	20.0	332088.0	7262773	21.87	9		20
gamma-BHC	2.872	2.850	2.894	20.0	327031.5	6789652	20.76	4		20
beta-BHC	2.920	2.898	2.942	20.0	191799.2	3827296	19.95	-0		20
delta-BHC	3.027	3.006	3.048	20.0	355796.5	7961739	22.38	12		20
Heptachlor	3.155	3.131	3.179	20.0	340376.6	6789951	19.95	-0		20
Aldrin	3.353	3.327	3.379	20.0	354684.2	6982947	19.69	-2		20
Heptachlor Epoxide	3.812	3.782	3.842	20.0	359106.5	7057749	19.65	-2		20
gamma-Chlordane	3.919	3.887	3.951	20.0	392256.3	7515647	19.16	-4		20
alpha-Chlordane	4.040	4.008	4.072	20.0	394418.4	7627277	19.34	-3		20
DDE	4.108	4.076	4.140	40.0	343789.3	14254399	41.46	4		20
Endosulfan I	4.175	4.140	4.210	20.0	419333.4	7572933	18.06	-10		20
Dieldrin	4.427	4.395	4.459	40.0	357644.9	14587000	40.79	2		20
Endrin	4.700	4.670	4.730	40.0	343628.3	13939098	40.56	1		20
DDD	4.789	4.759	4.819	40.0	268752.2	11755162	43.74	9		20
Endosulfan II	4.992	4.963	5.021	40.0	367000.6	14263613	38.87	-3		20
DDT	5.187	5.157	5.217	40.0	312997.5	12764879	40.78	2		20
Endrin Aldehyde	5.648	5.616	5.680	40.0	326603.0	11602818	35.53	-11		20
Methoxychlor	6.088	6.050	6.126	200.0	164669.2	30368656	228.25	14		20
Endosulfan Sulfate	6.504	6.468	6.540	40.0	409015.5	15873836	38.81	-3		20
Endrin Ketone	7.147	7.111	7.183	40.0	446867.9	17918564	40.10	0		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.369	2.349	2.389	20.0	210406.3	4583466	21.78	9		20
DCB	10.347	10.297	10.397	20.0	567820.8	10868120	19.14	-4		20

CONTINUE CALIBRATION
METHOD 8081

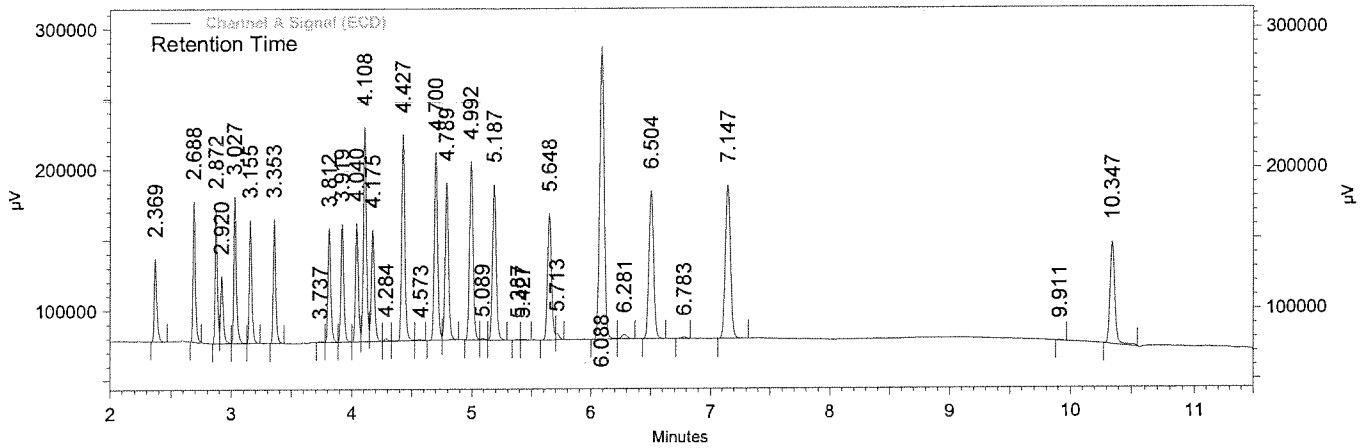
Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20021B 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19039B 02/20/2016 01:06
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	3.001	2.983	3.019	20.0	72036.4	2036927	28.28	41	*	20
gamma-BHC	3.236	3.219	3.253	20.0	79373.3	2209243	27.83	39	*	20
beta-BHC	3.283	3.266	3.300	20.0	51602.9	1330413	25.78	29	*	20
delta-BHC	3.507	3.490	3.524	20.0	77332.0	2360230	30.52	53	*	20
Heptachlor	3.569	3.551	3.587	20.0	87869.0	2167908	24.67	23	*	20
Aldrin	3.852	3.833	3.871	20.0	103752.3	2429728	23.42	17		20
Heptachlor Epoxide	4.437	4.414	4.460	20.0	97064.9	2372785	24.44	22	*	20
gamma-Chlordane	4.668	4.647	4.689	20.0	102558.3	2504319	24.42	22	*	20
alpha-Chlordane	4.865	4.847	4.883	20.0	101533.5	2496037	24.58	23	*	20
DDE	5.096	5.080	5.112	40.0	95539.7	4759013	49.81	25	*	20
Endosulfan I	4.955	4.936	4.974	20.0	105819.2	2573901	24.32	22	*	20
Dieldrin	5.380	5.363	5.397	40.0	99969.4	5030521	50.32	26	*	20
Endrin	5.935	5.915	5.955	40.0	99144.3	4932730	49.75	24	*	20
DDD	6.175	6.156	6.194	40.0	66411.8	3659700	55.11	38	*	20
Endosulfan II	6.383	6.361	6.405	40.0	103675.6	5058809	48.79	22	*	20
DDT	6.933	6.909	6.957	40.0	74582.2	3858951	51.74	29	*	20
Endrin Aldehyde	7.236	7.214	7.258	40.0	96524.7	4149047	42.98	7		20
Methoxychlor	9.347	9.319	9.375	200.0	45652.3	11454550	271.44	36	*	20
Endosulfan Sulfate	8.077	8.053	8.101	40.0	111570.2	5223335	46.82	17		20
Endrin Ketone	9.812	9.782	9.842	40.0	123295.7	6033418	48.94	22	*	20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.623	2.600	2.646	20.0	53703.4	1298736	24.18	21	*	20
DCB	12.127	12.092	12.162	20.0	145864.8	3028179	20.76	4		20

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2057
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19039.dat
User: ESanto
Acquired: 02/20/16 01:06:09
Printed: 02/22/16 14:33:30

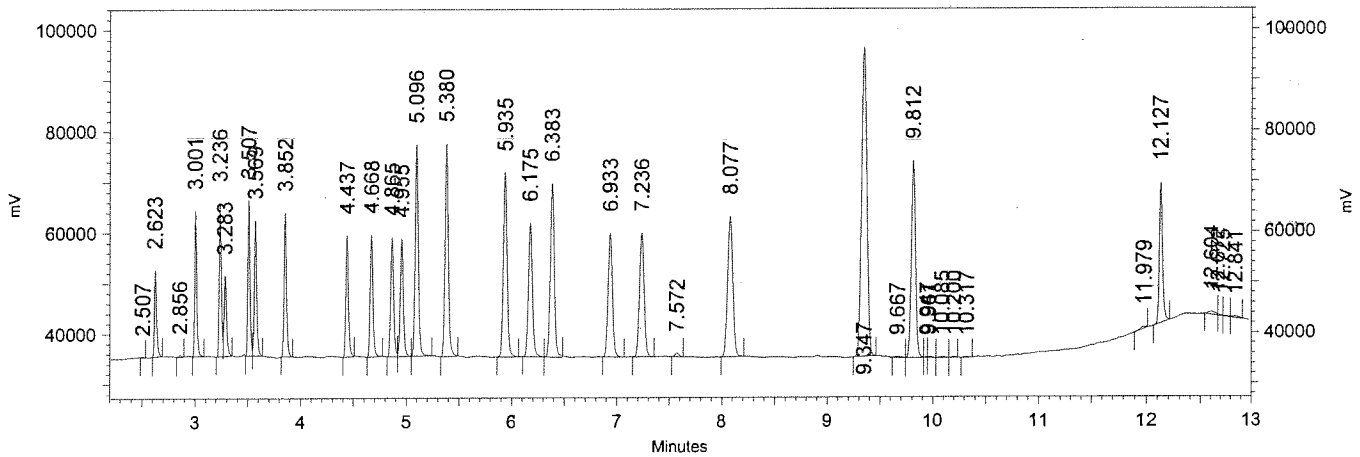


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.369	4583466	210406.3	21.784	BB
alpha-BHC	2.683	2.688	7262773	332088.1	21.870	BS
gamma-BHC	2.867	2.872	6789652	327031.5	20.761	BV
beta-BHC	2.916	2.920	3827296	191799.2	19.955	VV
delta-BHC	3.023	3.027	7961739	355796.5	22.377	VV
Heptachlor	3.148	3.155	6789951	340376.6	19.948	VS
Aldrin	3.345	3.353	6982947	354684.2	19.688	BS
Heptachlor Epoxide	3.803	3.812	7057749	359106.5	19.654	VV
gamma-Chlordane	3.908	3.919	7515647	392256.3	19.160	VV
alpha-Chlordane	4.029	4.040	7627277	394418.4	19.338	VV
DDE	4.099	4.108	14254399	343789.3	41.463	VV
Endosulfan I	4.163	4.175	7572933	419333.4	18.059	VV
Dieldrin	4.412	4.427	14587000	357645.0	40.786	SV
Endrin	4.684	4.700	13939098	343628.3	40.564	BV
DDD	4.776	4.789	11755162	268752.2	43.740	VS
Endosulfan II	4.976	4.992	14263613	367000.6	38.865	BV
DDT	5.169	5.187	12764879	312997.5	40.783	VB
Endrin aldehyde	5.628	5.648	11602818	326603.1	35.526	BS
Methoxychlor	6.065	6.088	30368655	164669.2	228.252	SV
Endosulfan Sulfate	6.480	6.504	15873836	409015.5	38.810	BB
Endrin Ketone	7.123	7.147	17918564	446868.0	40.098	BB
DCB	10.328	10.347	10868120	567820.8	19.140	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2057
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19039.dat
User: ESanto
Acquired: 02/20/16 01:06:09
Printed: 02/22/16 14:33:30



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.623	1298736	53703.4	24.183	SI
alpha-BHC	3.000	3.001	2036927	72036.4	28.276	II
gamma-BHC	3.233	3.236	2209243	79373.3	27.834	BV
beta-BHC	3.283	3.283	1330413	51602.9	25.782	VI
delta-BHC	3.505	3.507	2360230	77332.0	30.521	BV
Heptachlor	3.567	3.569	2167908	87869.0	24.672	VI
Aldrin	3.849	3.852	2429728	103752.3	23.419	II
Heptachlor Epoxide	4.433	4.437	2372785	97064.9	24.445	SS
gamma-Chlordane	4.664	4.668	2504319	102558.3	24.418	BB
alpha-Chlordane	4.861	4.865	2496037	101533.5	24.583	BV
Endosulfan I	4.951	4.955	2573901	105819.2	24.324	VB
DDE	5.093	5.096	4759013	95539.7	49.812	BS
Dieldrin	5.375	5.380	5030521	99969.4	50.321	BS
Endrin	5.929	5.935	4932730	99144.3	49.753	SI
DDD	6.172	6.175	3659700	66411.8	55.106	BB
Endosulfan II	6.379	6.383	5058809	103675.6	48.795	BS
DDT	6.931	6.933	3858951	74582.2	51.741	BB
Endrin Aldehyde	7.229	7.236	4149047	96524.7	42.984	SB
Endosulfan Sulfate	8.071	8.077	5223335	111570.2	46.817	BS
Methoxychlor	9.343	9.347	11454550	45652.3	271.442	SS
Endrin Ketone	9.807	9.812	6033418	123295.7	48.935	BV
DCB	12.123	12.127	3028179	145864.8	20.760	IB

CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20038A 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19040A 02/20/2016 01:26
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	335038.6	161745120	482.77	-3		20

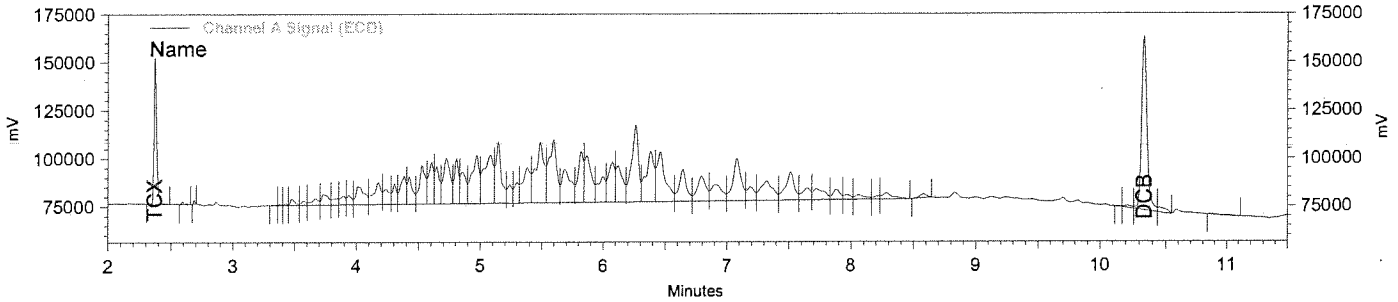
CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20038B 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19040B 02/20/2016 01:26
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	64631.4	36724852	568.22	14		20

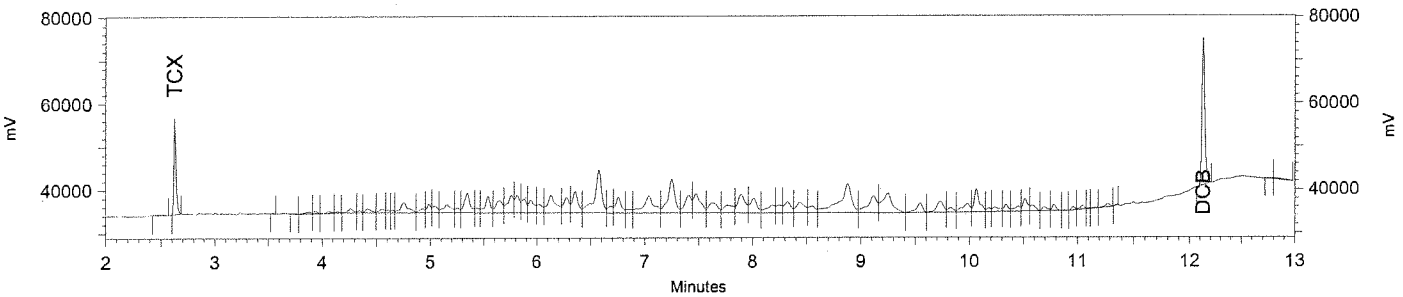
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CTOF9A2057
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19040.dat
User: ESanto
Acquired: 02/20/16 01:26:29
Printed: 02/22/16 16:20:30



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.369	5972970	223052.9	26.78	BI
DCB	10.381	10.335	13951063	576095.1	24.22	VV
Toxaphene			161745120	335038.6	482.77	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.625	1682807	53825.0	31.26	BI
DCB	12.143	12.129	3717017	146761.8	25.33	IB
Toxaphene			36724853	64631.4	568.22	

ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PESTICIDES

Note: For samples and relevant QCs/Standards analyzed, refer to ~~attached~~ analytical sequence.

Comments:

ICAL LEVEL PEST	MIX 3	CONCENTRATION (ppb) PEST	MIX 3
1	9	1.25/2.5/12.5	1.25/1.25
2	10	2.5/5/25	2.5/2.5
3	11	5/10/50	5/5
4	12	10/20/100	10/10
5	13	20/40/200	20/20
6	14	40/80/400	40/40
7	15	60/120/600	60/60
8	16	800/160/800	80/80

ICAL LEVEL TOXAPHENE	CONCENTRATION (ppb)
1	50/2.5
2	100/5
3	250/12.5
4	500/25
5	750/37.5
6	1000/50
7	1500/75
8	2000/100

ICAL LEVEL ~~TOXAPHENE~~ (CHLORDANE)	CONCENTRATION (ppb)
1	25/1.25
2	50/2.5
3	100/5
4	250/12.5
5	500/25
6	750/37.5
7	1000/50
8	1500/75

Book #: AF9-006

Instrument No.: F9

Analytical Sequence: RA20

Method File: CPF9A20, TOF9A20, CRF9A20, CPF9A20A

Analytical Batch: RA20008

SOP #	Rev. #
☑ EMAX-8081	8
☐ EMAX-8082	5
☐ EMAX-608	1

ICAL REFERENCE

ICAL ID	BATCH	DATE
CPF9A20	RA20	01-20-2016
TOF9A20	RA20	01-20-2016
CRF9A20	RA20	01-20-2016
CPF9A20A	RA20	01-20-2016

STANDARDS ID		Conc (µg/L)
Hexane	SWLA-005-16-01	N/A
IB	SSIC-12-85-01	40/40
PEM	SSIC-12-87-01	100/100
PEST ICAL	SSIC-12-92-02	see comments
PEST ICV	SSIC-12-92-03	20/20
MIX 3 ICAL	SSIC-12-93-01	see comments
MIX 3 ICV	SSIC-12-93-02	20/20
TOXA ICAL	SSIC-12-93-03	see comments
TOXA ICV	SSIC-12-94-01	500/25
CHLO ICAL	SSIC-12-94-02	see comments
CHLO ICV	SSIC-12-94-03	500/25

Column	
	☐ A. Elite-CLP 1 B. Elite-CLP 2
	☑ A. STX CLPEST 1 B. STX CLPEST 2 / A. RTX CLPEST 1 B. STX CLPEST 2
	☐ A. ZB-MULTI RES 1 B. ZB-MULTI RES 2

ELECTRONIC DATA ARCHIVAL

Location	Date
☐ EZChrom Elite_PEST F9	

Analyzed By: [signature] Analysis Date: 01-20-2016

Disposed By: Disposal Date:

This page is checked during data review

Sequence: RA20.seq

Run #	Status	Vial	Volume	Sample ID	Method	Filename	Multiplie	Description
1		1	1	HEXANE RINSE	CPF9A20.met	RA20001.dat	1	
2		2	1	CHLO PRIME	CRF9A20.met	RA20002.dat	1	
3		3	1	TOXA PRIME	TOF9A20.met	RA20003.dat	1	
4		4	1	PEST PRIME	CPF9A20.met	RA20004.dat	1	
5		5	1	MIX3 PRIME	CPF9A20.met	RA20005.dat	1	
6		6	1	IBF9A2001	CPF9A20.met	RA20006.dat	1	
7		7	1	PEF9A2001	CPF9A20.met	RA20007.dat	1	
8		8	1	CRF9A2001 (25/1.25ppb CHLO ICAL)	CRF9A20.met	RA20008.dat	1	
9		9	1	CRF9A2002 (50/2.5ppb CHLO ICAL)	CRF9A20.met	RA20009.dat	1	
10		10	1	CRF9A2003 (100/5ppb CHLO ICAL)	CRF9A20.met	RA20010.dat	1	
11		11	1	CRF9A2004 (250/12.5ppb CHLO ICAL)	CRF9A20.met	RA20011.dat	1	
12		12	1	CRF9A2005 (500/25ppb CHLO ICAL)	CRF9A20.met	RA20012.dat	1	
13		13	1	CRF9A2006 (750/37.5ppb CHLO ICAL)	CRF9A20.met	RA20013.dat	1	
14		14	1	CRF9A2007 (1000/50ppb CHLO ICAL)	CRF9A20.met	RA20014.dat	1	
15		15	1	CRF9A2008 (1500/75ppb CHLO ICAL)	CRF9A20.met	RA20015.dat	1	
16		16	1	ICRF9A2001 (500/25ppb CHLO ICV)	CRF9A20.met	RA20016.dat	1	
17		17	1	CPF9A2001 (1.25/2.5/12.5ppb PEST ICAL)	CPF9A20.met	RA20017.dat	1	
18		18	1	CPF9A2002 (2.5/5/25ppb PEST ICAL)	CPF9A20.met	RA20018.dat	1	
19		19	1	CPF9A2003 (5/10/50ppb PEST ICAL)	CPF9A20.met	RA20019.dat	1	
20		20	1	CPF9A2004 (10/20/100ppb PEST ICAL)	CPF9A20.met	RA20020.dat	1	
21		21	1	CPF9A2005 (20/40/200ppb PEST ICAL)	CPF9A20.met	RA20021.dat	1	
22		22	1	CPF9A2006 (40/80/400ppb PEST ICAL)	CPF9A20.met	RA20022.dat	1	
23		23	1	CPF9A2007 (60/120/600ppb PEST ICAL)	CPF9A20.met	RA20023.dat	1	
24		24	1	CPF9A2008 (80/160/800ppb PEST ICAL)	CPF9A20.met	RA20024.dat	1	
25		25	1	CPF9A2009 (1.25/1.25ppb MIX3 ICAL)	CPF9A20.met	RA20025.dat	1	
26		26	1	CPF9A2010 (2.5/2.5ppb MIX3 ICAL)	CPF9A20.met	RA20026.dat	1	
27		27	1	CPF9A2011 (5/5ppb MIX3 ICAL)	CPF9A20.met	RA20027.dat	1	
28		28	1	CPF9A2012 (10/10ppb MIX3 ICAL)	CPF9A20.met	RA20028.dat	1	
29		29	1	CPF9A2013 (20/20ppb MIX3 ICAL)	CPF9A20.met	RA20029.dat	1	
30		30	1	CPF9A2014 (40/40ppb MIX3 ICAL)	CPF9A20.met	RA20030.dat	1	
31		31	1	CPF9A2015 (60/60ppb MIX3 ICAL)	CPF9A20.met	RA20031.dat	1	
32		32	1	CPF9A2016 (80/80ppb MIX3 ICAL)	CPF9A20.met	RA20032.dat	1	
33		33	1	ICPF9A2001 (20/200ppb PEST ICV)	CPF9A20.met	RA20033.dat	1	
34		34	1	ICPF9A2001A (20/20ppb MIX3 ICV)	CPF9A20.met	RA20034.dat	1	
35		35	1	TOF9A2001 (50/2.5ppb TOXA ICAL)	TOF9A20.met	RA20035.dat	1	
36		36	1	TOF9A2002 (100/5ppb TOXA ICAL)	TOF9A20.met	RA20036.dat	1	
37		37	1	TOF9A2003 (250/12.5ppb TOXA ICAL)	TOF9A20.met	RA20037.dat	1	
38		38	1	TOF9A2004 (500/25ppb TOXA ICAL)	TOF9A20.met	RA20038.dat	1	
39		39	1	TOF9A2005 (750/37.5ppb TOXA ICAL)	TOF9A20.met	RA20039.dat	1	
40		40	1	TOF9A2006 (1000/50ppb TOXA ICAL)	TOF9A20.met	RA20040.dat	1	
41		41	1	TOF9A2007 (1500/75ppb TOXA ICAL)	TOF9A20.met	RA20041.dat	1	
42		42	1	TOF9A2008 (2000/100ppb TOXA ICAL)	TOF9A20.met	RA20042.dat	1	
43		43	1	ITOF9A2001 (500/25ppb TOXA ICV)	TOF9A20.met	RA20043.dat	1	

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PESTICIDES

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #: AF9-006

Instrument No.: F9

Analytical Sequence: RB19

Method File: CPF9A20, TOF9A20

Analytical Batch: RB19017

SOP #	Rev. #
☑ EMAX-8081	8
☐ EMAX-8082	5
☐ EMAX-608	1

ICAL REFERENCE

ICAL ID	BATCH	DATE
CPF9A20	RA20	01-20-2016
TOF9A20	RA20	01-20-2016

STANDARDS ID		Conc (µg/L)
Hexane	SWLA-005-16-01	N/A
IB	SSIC-12-90-03	40/40
PEM	SSIC-12-96-01	100/100
PEST DCC	SSIC-12-95-01	20/40/200
TOXA DCC	SSIC-12-95-02	500/25

Column	
	☐ A. Elite-CLP 1 B. Elite-CLP 2
	☑ A. STX CLPEST 1 B. STX CLPEST 2 / A. RTX CLPEST 1 B. STX CLPEST 2
	☐ A. ZB-MULTI RES 1 B. ZB-MULTI RES 2

ELECTRONIC DATA ARCHIVAL

Location	Date
☐ EZChrom Elite_PEST F9	

Analyzed By: [illegible] Analysis Date: 02-19-2016

Disposed By: [illegible] Disposal Date: 02-22-2016

This page is checked during data review

Sequence: RB19.seq

Run #	Status	Vial	Volume	Sample ID	Method	Filename	Multiplie	Description
1		1	1	HEXANE RINSE	CPF9A20.met	RB19001.dat	1	
2		2	1	PEST PRIME	CPF9A20.met	RB19002.dat	1	
3		3	1	IBF9A2053	CPF9A20.met	RB19003.dat	1	
4		4	1	PEF9A2053	CPF9A20.met	RB19004.dat	1	
5		5	1	CCPF9A2053	CPF9A20.met	RB19005.dat	1	
6		6	1	CTOF9A2053	TOF9A20.met	RB19006.dat	1	
7		7	1	B121-01 (QC WATER)	CPF9A20.met	RB19007.dat	1	not used;
8		8	1	B017-01 (QC HYDROMATRIX)	CPF9A20.met	RB19008.dat	1	see
9		9	1	B132-01 (QC TBA REAGENT)	CPF9A20.met	RB19009.dat	1	re-run
10		10	1	IBF9A2054	CPF9A20.met	RB19010.dat	1	
11		11	1	PEF9A2054	CPF9A20.met	RB19011.dat	1	
12		12	1	CCPF9A2054	CPF9A20.met	RB19012.dat	1	
13		13	1	CTOF9A2054	TOF9A20.met	RB19013.dat	1	
14		14	1	B121-01 (QC WATER)	CPF9A20.met	RB19014.dat	1	not used;
15		15	1	B017-01 (QC HYDROMATRIX)	CPF9A20.met	RB19015.dat	1	see
16		16	1	B132-01 (QC TBA REAGENT)	CPF9A20.met	RB19016.dat	1	re-run
17		17	1	CCPF9A2055	CPF9A20.met	RB19017.dat	1	
18	Acquirir	18	1	B121-01 (QC WATER)	CPF9A20.met	RB19018.dat	1	
19		19	1	B017-01 (QC HYDROMATRIX)	CPF9A20.met	RB19019.dat	1	
20		20	1	B132-01 (QC TBA REAGENT)	CPF9A20.met	RB19020.dat	1	
21		21	1	CPB030SB (S)	CPF9A20.met	RB19021.dat	1	
22		22	1	CPB030SL (S)	CPF9A20.met	RB19022.dat	1	
23		23	1	CPB030SC (S)	CPF9A20.met	RB19023.dat	1	
24		24	1	CPB030SX (S)	CPF9A20.met	RB19024.dat	1	
25		25	1	CPB030SY (S)	CPF9A20.met	RB19025.dat	1	
26		26	1	IBF9A2056	CPF9A20.met	RB19026.dat	1	
27		27	1	PEF9A2056	CPF9A20.met	RB19027.dat	1	
28		28	1	CCPF9A2056	CPF9A20.met	RB19028.dat	1	
29		29	1	CTOF9A2056	TOF9A20.met	RB19029.dat	1	
30		30	1	CPB025WB	CPF9A20.met	RB19030.dat	1	
31		31	1	CPB025WL	CPF9A20.met	RB19031.dat	1	
32		32	1	CPB025WC	CPF9A20.met	RB19032.dat	1	
33		33	1	TXB005SB	CPF9A20.met	RB19033.dat	1	
34		34	1	B094-02	CPF9A20.met	RB19034.dat	1	
35		35	1	B094-03	CPF9A20.met	RB19035.dat	1	
36		36	1	B113-02	CPF9A20.met	RB19036.dat	1	
37		37	1	B113-03	CPF9A20.met	RB19037.dat	1	
38		38	1	IBF9A2057	CPF9A20.met	RB19038.dat	1	
39		39	1	CCPF9A2057	CPF9A20.met	RB19039.dat	1	
40		40	1	CTOF9A2057	TOF9A20.met	RB19040.dat	1	

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
PESTICIDES

SOP	Rev. #
☐ EMAX-608	2
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	4
☐ EMAX-3580	2
☐ EMAX-3620	2
☐ EMAX-3660	1
☐ EMAX-3665	2

Note: For samples, relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ECP-080
Preparation Batch: CPB025 W
Matrix: Water / TCLP EXTRACT
Micropipette ID: PE00-03 (1000 µl)
Micropipette ID:

STANDARDS	ID	Amount Added (ml)
Surrogate	SSIC-12-92-01	0.4
LCS/MS (Pest) ★	SSIC-12-91-01	0.5
LCS/MS (PCB) ▲	SSIC-14-78-01	0.5
LCS/MS		

Reagents	Lot # / ID
CH_2Cl_2	151090508
Hexane	55149
Acetone	
Na_2SO_4	SWIB-003-07-25
H_2SO_4	
TBA Reagent	
Silica Sand	—
Florisil & Eluting Solvent	—
Isopropyl Alcohol	SPIA-07-01-16
Reagent Water	SWIA-005-16-02
Residual Chlorine Strip	5190
pH strip	HC573149
Hexane/Acetone Soln. (50:50)	—
Filter Paper	9695028 A

Lab Sample ID	Sonicator #	Cell #	Concentrator #
CPB025 WB			32/6
-WL	★		32/6
-WC	★		32/6
EOB025 WL	▲		32/6
-WC	▲		32/6
B121-01			32/5
TXB005 SB			43/6
B094-02			43/5
B094-03			23/5
B102-01			43/5
-02			43/5
-02M	■		43/5
-02S	■		44/5
-03			44/6
B113-02			44/6
-03			44/6
B116-02			44/6
B500-01			44/6
-02			6/6

Tuning	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2	35	35
3	35	35
4	35	35
5	35/60	35/60
6	35/60	35/60
7		
8		

Test Thermometer = SVOC-T1

Prepared By: JM
Witnessed By: TW
Standard Added By: JM
Checked By: ML
Extract Received By: JB 2/18/16
Location: VE02-01A
Disposed By:
Disposed On:

FileID: CPB025W

EMAX LABORATORIES INC

EXTRACTION LOG FOR PESTICIDES/PCBs

PrepBatchID	LabSampleID	Aliquot	Unit	Ve (ml)	EA	EVe (ml)	PF	FlorisilCleanup EMAX-3620	SulfurCleanup EMAX-3660	[1]AcidCleanup EMAX-3665	Comments
16CPB025W01	CPB025WB	1000	ml	10	1000	10	1				
16CPB025W02	CPB025WL	1000	ml	10	1000	10	1				Pest
16CPB025W03	CPB025WC	1000	ml	10	1000	10	1				Pest
16CPB025W04	60B025WL	1000	ml	10	1000	10	1				PCB
16CPB025W05	60B025WC	1000	ml	10	1000	10	1				PCB
16CPB025W06	B121-01	1000	ml	10	1000	10	1				QC (SW1A-005-16-12)
16CPB025W07	TXB005SB	100	ml	10	1000	10	10				TCLP Extract
16CPB025W08	B094-02	100	ml	10	1000	10	10				TCLP Extract
16CPB025W09	B094-03	1010	ml	10	1000	10	0.99				milky light brown w/bubbl
16CPB025W10	B102-01	1050	ml	10	1000	10	0.95				yellow,PCB
16CPB025W11	B102-02	1000	ml	10	1000	10	1				PCB
16CPB025W12	B102-02M	930	ml	10	1000	10	1.08				PCB
16CPB025W13	B102-02S	970	ml	10	1000	10	1.03				PCB
16CPB025W14	B102-03	1060	ml	10	1000	10	0.94				PCB
16CPB025W15	B113-02	990	ml	10	1000	10	1.01				light yellow,PEST/PCB
16CPB025W16	B113-03	980	ml	10	1000	10	1.02				PEST,PCB
16CPB025W17	B116-02	990	ml	10	1000	10	1.01				PCB
16CPB025W18	B500-01	990	ml	10	1000	10	1.01				PCB
16CPB025W19	B500-02	1000	ml	10	1000	10	1				PCB

☑ ExtractionStarted @ 2/17/2016 12:45

Ve=ExtractVolume **EA**= ExpectedAliquot **EVe**=ExpectedExtractVolume **PF**=(EA/Aliquot)(Ve/EVe)

☑ Extraction Ended @ 2/18/2016 6:45

Prepared By: JMuert

Checked By: ML

Comment: [1]Acid cleanup is only for PCB anlaysis.

pH 5 - 9, Chlorine not detected.

Date 2/18/16

SOP EMAX-3520 Rev. 5

TCLP PESTICIDES

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/19/16 23:24
Lab Samp ID:	B094-02	Dilution Factor:	10
Lab File ID:	RB19034A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)|ND	1.0	0.050	0.10
HEPTACHLOR	(ND)|ND	1.0	0.070	0.10
HEPTACHLOR EPOXIDE	(ND)|ND	1.0	0.050	0.10
GAMMA-CHLORDANE	(ND)|ND	1.0	0.050	0.10
ALPHA-CHLORDANE	(ND)|ND	1.0	0.050	0.10
ENDRIN	(ND)|ND	1.0	0.080	0.10
METHOXYCHLOR	(ND)|ND	10	0.50	1.0
TOXAPHENE	(ND)|ND	20	2.5	5.0

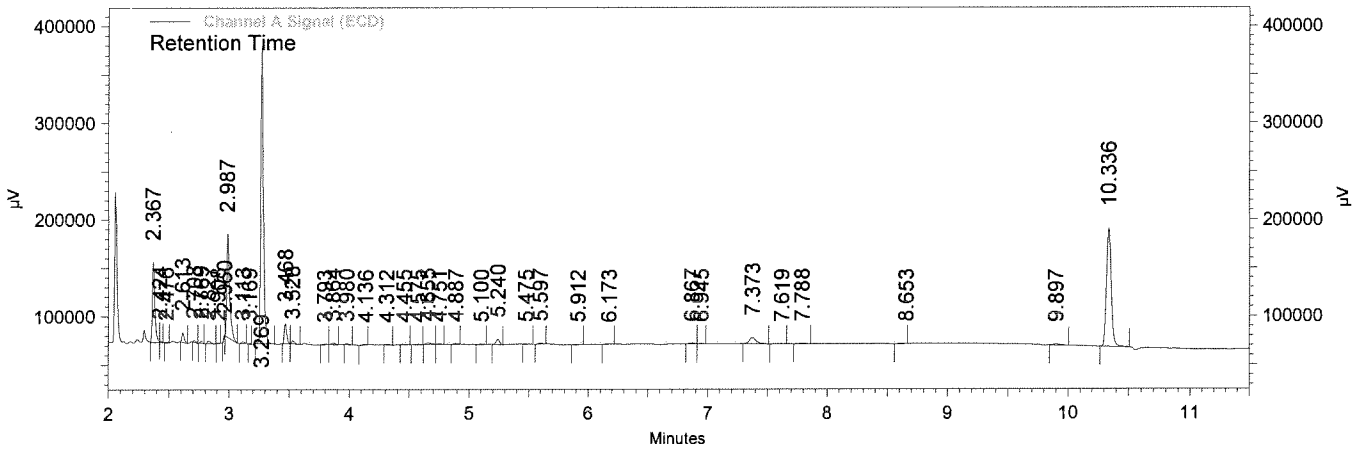
SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(3.067)|3.768	4.000	(76.7)|94.2	25-140
DECACHLOROBIPHENYL	(3.227)|3.707	4.000	(80.7)|92.7	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

DateTime Leached: 02/16/16 17:30

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: B094-02
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19034.dat
User: ESanto
Acquired: 02/19/16 23:24:34
Printed: 02/22/16 14:49:33

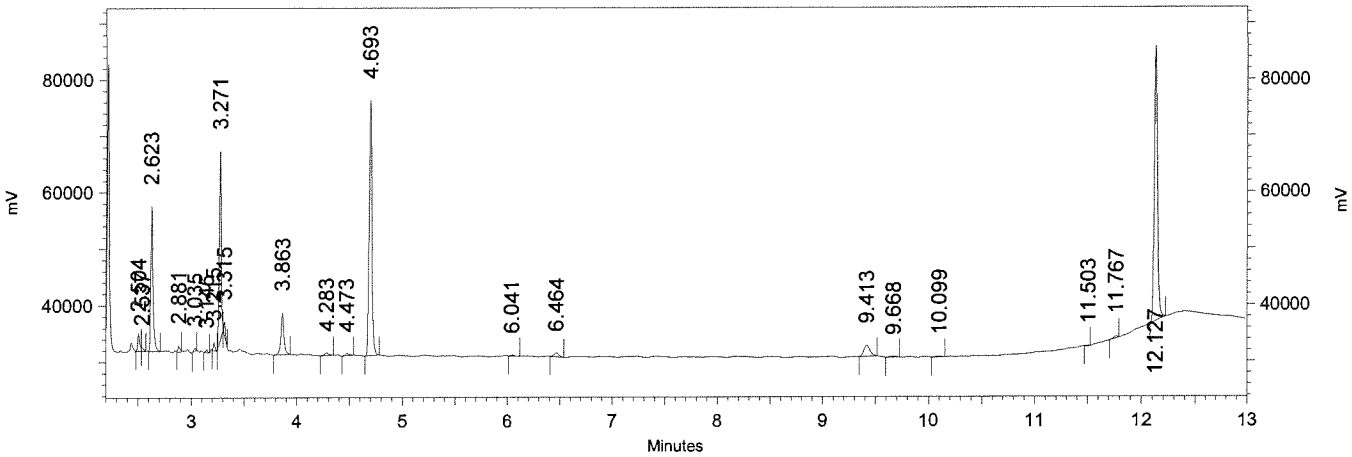


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.367	6453948	210406.3	30.674	BS
alpha-BHC	2.683				0.000 BDL	
gamma-BHC	2.867				0.000 BDL	
beta-BHC	2.916	2.908	51066	191799.2	0.266	vv
delta-BHC	3.023				0.000 BDL	
Heptachlor	3.148				0.000 BDL	
Aldrin	3.345				0.000 BDL	
Heptachlor Epoxide	3.803	3.793	47680	359106.5	0.133	vv
gamma-Chlordane	3.908				0.000 BDL	
alpha-Chlordane	4.029				0.000 BDL	
DDE	4.099				0.000 BDL	
Endosulfan I	4.163				0.000 BDL	
Dieldrin	4.412				0.000 BDL	
Endrin	4.684				0.000 BDL	
DDD	4.776				0.000 BDL	
Endosulfan II	4.976				0.000 BDL	
DDT	5.169				0.000 BDL	
Endrin aldehyde	5.628				0.000 BDL	
Methoxychlor	6.065				0.000 BDL	
Endosulfan Sulfate	6.480				0.000 BDL	
Endrin Ketone	7.123				0.000 BDL	
DCB	10.328	10.336	18324775	567820.8	32.272	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: B094-02
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19034.dat
User: ESanto
Acquired: 02/19/16 23:24:34
Printed: 02/22/16 14:49:33



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.623	2023499	53703.4	37.679	SS
alpha-BHC	3.000				0.000 BDL	
gamma-BHC	3.233				0.000 BDL	
beta-BHC	3.283	3.271	2353739	51602.9	45.613	vv
delta-BHC	3.505				0.000 BDL	
Heptachlor	3.567				0.000 BDL	
Aldrin	3.849	3.863	782491	103752.3	7.542	vv
Heptachlor Epoxide	4.433				0.000 BDL	
gamma-Chlordane	4.664				0.000 BDL	
alpha-Chlordane	4.861				0.000 BDL	
Endosulfan I	4.951				0.000 BDL	
DDE	5.093				0.000 BDL	
Dieldrin	5.375				0.000 BDL	
Endrin	5.929				0.000 BDL	
DDD	6.172				0.000 BDL	
Endosulfan II	6.379				0.000 BDL	
DDT	6.931				0.000 BDL	
Endrin Aldehyde	7.229				0.000 BDL	
Endosulfan Sulfate	8.071				0.000 BDL	
Methoxychlor	9.343				0.000 BDL	
Endrin Ketone	9.807				0.000 BDL	
DCB	12.123	12.127	5406917	145864.8	37.068	SB

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3520C/8081B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	CPB025WB	CPB025WL	CPB025WC		
LAB FILE ID:	RB19030A	RB19031A	RB19032A		
DATE EXTRACTED:	02/17/1612:45	02/17/1612:45	02/17/1612:45	DATE COLLECTED:	NA
DATE ANALYZED:	02/19/1622:02	02/19/1622:23	02/19/1622:43	DATE RECEIVED:	02/17/16
PREP. BATCH:	CPB025W	CPB025W	CPB025W		
CALIB. REF:	RB19028A	RB19028A	RB19028A		

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 (%)
gamma-BHC (Lindane)	(ND)|ND	0.200	(0.155)|0.187	(78)|94	0.200	(0.171)|0.192	(86)|96	(10)|3	25-135	30
Heptachlor	(ND)|ND	0.200	(0.155)|0.183	(78)|92	0.200	(0.167)|0.202	(84)|101	(7)|10	40-130	30
Heptachlor Epoxide	(ND)|ND	0.200	(0.163)|0.187	(82)|94	0.200	(0.179)|0.204	(90)|102	(9)|9	60-130	30
gamma-Chlordane	(ND)|ND	0.200	(0.158)|0.188	(79)|94	0.200	(0.173)|0.226	(86)|113	(9)|18	60-125	30
alpha-Chlordane	(ND)|ND	0.200	(0.155)|0.190	(78)|95	0.200	(0.167)|0.206	(84)|103	(7)|8	65-125	30
Endrin	(ND)|ND	0.200	(0.183)|0.203	(92)|101	0.200	(0.199)|0.212	(100)|106	(8)|4	55-135	30
Methoxychlor	(ND)|ND	2.00	(1.90)|2.28	(95)|114	2.00	(2.05)|2.45	(102)|122	(8)|7	55-150	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 (%)
Tetrachloro-m-xylene	0.4000	(0.3074)|0.3629	(76.9)|90.7	0.4000	(0.3229)|0.3903	(80.7)|97.6	25-140
Decachlorobiphenyl	0.4000	(0.3315)|0.3709	(82.9)|92.7	0.4000	(0.3379)|0.3831	(84.5)|95.8	30-135

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client : URS CORPORATION	Date Collected: NA
Project : CANNON AFB PBR	Date Received: 02/17/16
Batch No. : 16B094	Date Extracted: 02/17/16 12:45
Sample ID: MBLK1W	Date Analyzed: 02/19/16 22:02
Lab Samp ID: CPB025WB	Dilution Factor: 1
Lab File ID: RB19030A	Matrix : WATER
Ext Btch ID: CPB025W	% Moisture : NA
Calib. Ref.: RB19028A	Instrument ID : F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)|ND	0.10	0.0050	0.010
HEPTACHLOR	(ND)|ND	0.10	0.0070	0.010
HEPTACHLOR EPOXIDE	(ND)|ND	0.10	0.0050	0.010
GAMMA-CHLORDANE	(ND)|ND	0.10	0.0050	0.010
ALPHA-CHLORDANE	(ND)|ND	0.10	0.0050	0.010
ENDRIN	(ND)|ND	0.10	0.0080	0.010
METHOXYCHLOR	(ND)|ND	1.0	0.050	0.10
TOXAPHENE	(ND)|ND	2.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.2941)|0.3537	0.4000	(73.5)|88.4	25-140
DECACHLOROBIPHENYL	(0.3017)|0.3451	0.4000	(75.4)|86.3	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 12:45
Sample ID:	MBLK2W	Date Analyzed:	02/19/16 23:04
Lab Samp ID:	TXB005SB	Dilution Factor:	10
Lab File ID:	RB19033A	Matrix :	WATER
Ext Btch ID:	CPB025W	% Moisture :	NA
Calib. Ref.:	RB19028A	Instrument ID :	F9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND)|ND	1.0	0.050	0.10
HEPTACHLOR	(ND)|ND	1.0	0.070	0.10
HEPTACHLOR EPOXIDE	(ND)|ND	1.0	0.050	0.10
GAMMA-CHLORDANE	(ND)|ND	1.0	0.050	0.10
ALPHA-CHLORDANE	(ND)|ND	1.0	0.050	0.10
ENDRIN	(ND)|ND	1.0	0.080	0.10
METHOXYCHLOR	(ND)|ND	10	0.50	1.0
TOXAPHENE	(ND)|ND	20	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(3.123)|3.660	4.000	(78.1)|91.5	25-140
DECACHLOROBIPHENYL	(3.191)|3.652	4.000	(79.8)|91.3	30-135

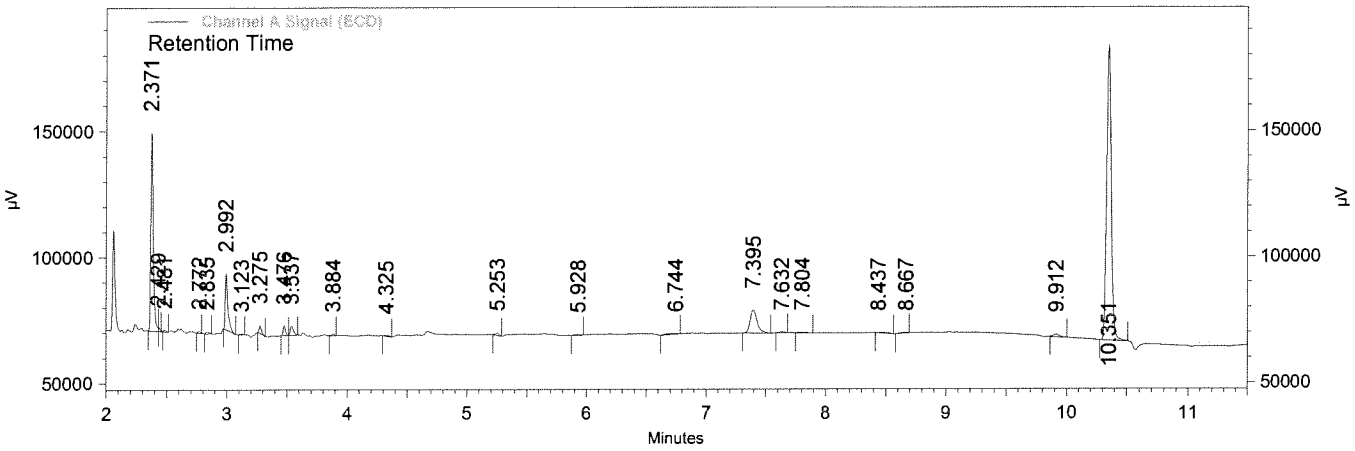
Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

DateTime Leached: 02/16/16 17:30

QC DATA

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WB
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19030.dat
User: ESanto
Acquired: 02/19/16 22:02:57
Printed: 02/22/16 14:39:37



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.371	6188744	210406.3	29.413	SS
alpha-BHC	2.683				0.000 BDL	
gamma-BHC	2.867				0.000 BDL	
beta-BHC	2.916				0.000 BDL	
delta-BHC	3.023				0.000 BDL	
Heptachlor	3.148				0.000 BDL	
Aldrin	3.345				0.000 BDL	
Heptachlor Epoxide	3.803				0.000 BDL	
gamma-Chlordane	3.908				0.000 BDL	
alpha-Chlordane	4.029				0.000 BDL	
DDE	4.099				0.000 BDL	
Endosulfan I	4.163				0.000 BDL	
Dieldrin	4.412				0.000 BDL	
Endrin	4.684				0.000 BDL	
DDD	4.776				0.000 BDL	
Endosulfan II	4.976				0.000 BDL	
DDT	5.169				0.000 BDL	
Endrin aldehyde	5.628				0.000 BDL	
Methoxychlor	6.065				0.000 BDL	
Endosulfan Sulfate	6.480				0.000 BDL	
Endrin Ketone	7.123				0.000 BDL	
DCB	10.328	10.351	17131916	567820.8	30.171	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WB
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19030.dat
User: ESanto
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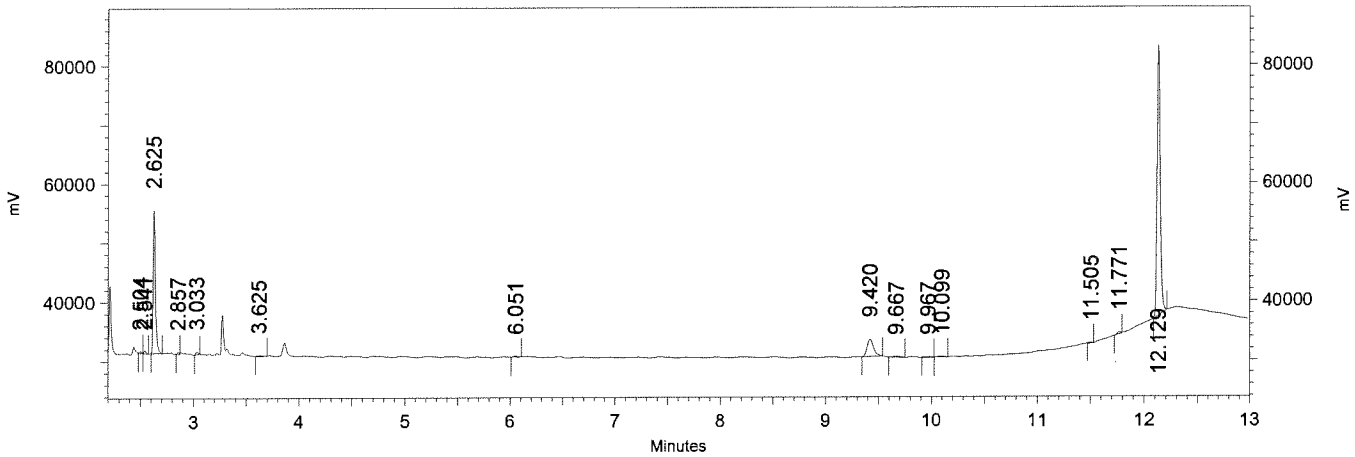
Printed: 02/22/16 14:39:37

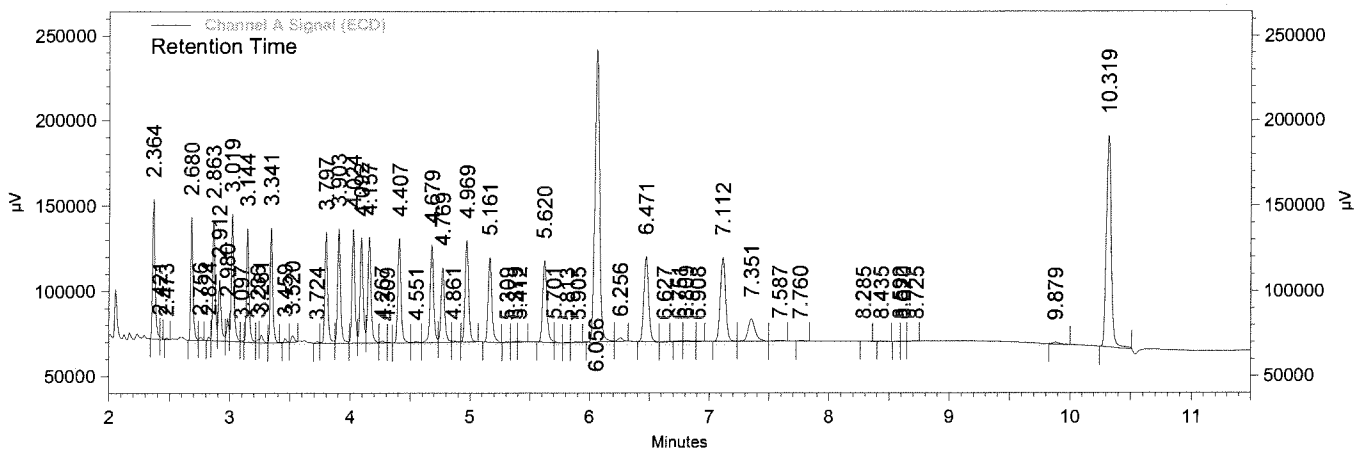


Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.625	1899726	53703.4	35.374	SB
alpha-BHC	3.000				0.000 BDL	
gamma-BHC	3.233				0.000 BDL	
beta-BHC	3.283				0.000 BDL	
delta-BHC	3.505				0.000 BDL	
Heptachlor	3.567				0.000 BDL	
Aldrin	3.849				0.000 BDL	
Heptachlor Epoxide	4.433				0.000 BDL	
gamma-Chlordane	4.664				0.000 BDL	
alpha-Chlordane	4.861				0.000 BDL	
Endosulfan I	4.951				0.000 BDL	
DDE	5.093				0.000 BDL	
Dieldrin	5.375				0.000 BDL	
Endrin	5.929				0.000 BDL	
DDD	6.172				0.000 BDL	
Endosulfan II	6.379				0.000 BDL	
DDT	6.931				0.000 BDL	
Endrin Aldehyde	7.229				0.000 BDL	
Endosulfan Sulfate	8.071				0.000 BDL	
Methoxychlor	9.343				0.000 BDL	
Endrin Ketone	9.807				0.000 BDL	
DCB	12.123	12.129	5034094	145864.8	34.512	SB

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WL
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19031.dat
User: ESanto
Acquired: 02/19/16 22:23:22
Printed: 02/22/16 14:58:53

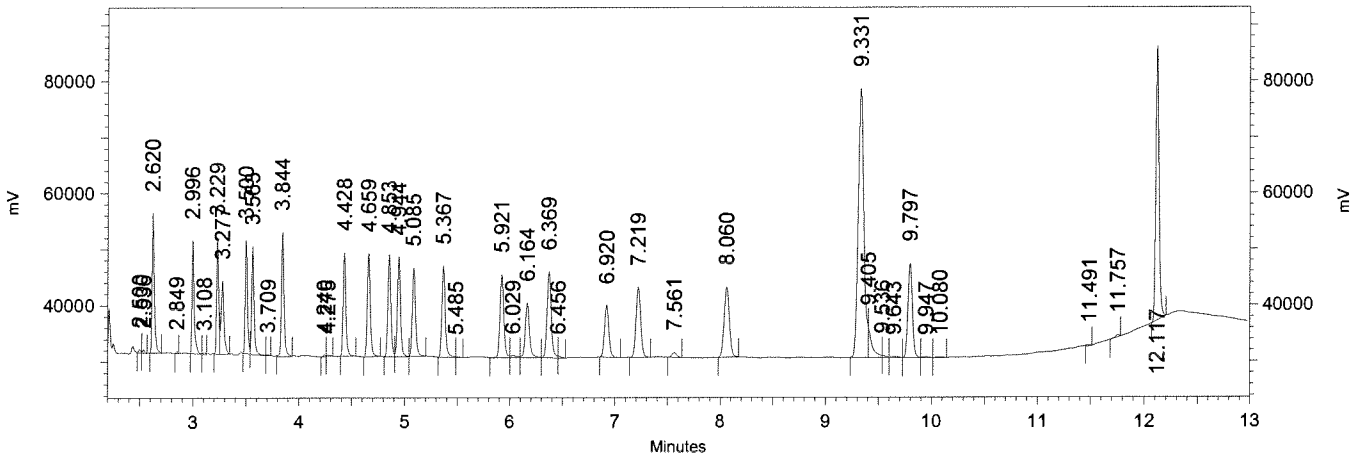


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.364	6468387	210406.3	30.742	BS
alpha-BHC	2.683	2.680	5218320	332088.1	15.714	BV
gamma-BHC	2.867	2.863	5072134	327031.5	15.510	VV
beta-BHC	2.916	2.912	3096209	191799.2	16.143	VV
delta-BHC	3.023	3.019	6026585	355796.5	16.938	VV
Heptachlor	3.148	3.144	5289983	340376.6	15.542	VV
Aldrin	3.345	3.341	5342236	354684.2	15.062	BV
Heptachlor Epoxide	3.803	3.797	5853346	359106.5	16.300	SV
gamma-Chlordane	3.908	3.903	6212537	392256.3	15.838	VV
alpha-Chlordane	4.029	4.024	6119934	394418.4	15.516	VV
DDE	4.099	4.092	5866184	343789.3	17.063	VV
Endosulfan I	4.163	4.157	6124602	419333.4	14.606	VV
Dieldrin	4.412	4.407	6171763	357645.0	17.257	BV
Endrin	4.684	4.679	6280528	343628.3	18.277	VV
DDD	4.776	4.769	4812744	268752.2	17.908	VS
Endosulfan II	4.976	4.969	6689750	367000.6	18.228	VS
DDT	5.169	5.161	5936760	312997.5	18.967	BB
Endrin aldehyde	5.628	5.620	6333653	326603.1	19.393	BS
Methoxychlor	6.065	6.056	25703245	164669.2	189.918	SV
Endosulfan Sulfate	6.480	6.471	7501129	409015.5	18.339	BB
Endrin Ketone	7.123	7.112	8130576	446868.0	18.195	BV
DCB	10.328	10.319	18821539	567820.8	33.147	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WL
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19031.dat
User: ESanto
Acquired: 02/19/16 22:23:22
Printed: 02/22/16 14:58:53



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.620	1948972	53703.4	36.291	SS
alpha-BHC	3.000	2.996	1530152	72036.4	21.241	IV
gamma-BHC	3.233	3.229	1485935	79373.3	18.721	SV
beta-BHC	3.283	3.277	1314130	51602.9	25.466	VI
delta-BHC	3.505	3.500	1568104	77332.0	20.278	BV
Heptachlor	3.567	3.563	1605993	87869.0	18.277	VV
Aldrin	3.849	3.844	2032327	103752.3	19.588	SS
Heptachlor Epoxide	4.433	4.428	1818853	97064.9	18.739	SS
gamma-Chlordane	4.664	4.659	1931254	102558.3	18.831	BB
alpha-Chlordane	4.861	4.853	1928568	101533.5	18.994	BV
Endosulfan I	4.951	4.944	1954821	105819.2	18.473	VB
DDE	5.093	5.085	1814037	95539.7	18.987	BS
Dieldrin	5.375	5.367	1978540	99969.4	19.791	BS
Endrin	5.929	5.921	2017383	99144.3	20.348	SV
DDD	6.172	6.164	1490238	66411.8	22.439	VV
Endosulfan II	6.379	6.369	2286423	103675.6	22.054	VS
DDT	6.931	6.920	1457598	74582.2	19.544	BB
Endrin Aldehyde	7.229	7.219	2128812	96524.7	22.055	SB
Endosulfan Sulfate	8.071	8.060	2358223	111570.2	21.137	BS
Methoxychlor	9.343	9.331	9690990	45652.3	228.463	BS
Endrin Ketone	9.807	9.797	2647556	123295.7	21.473	BV
DCB	12.123	12.117	5410540	145864.8	37.093	IB

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WC
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19032.dat
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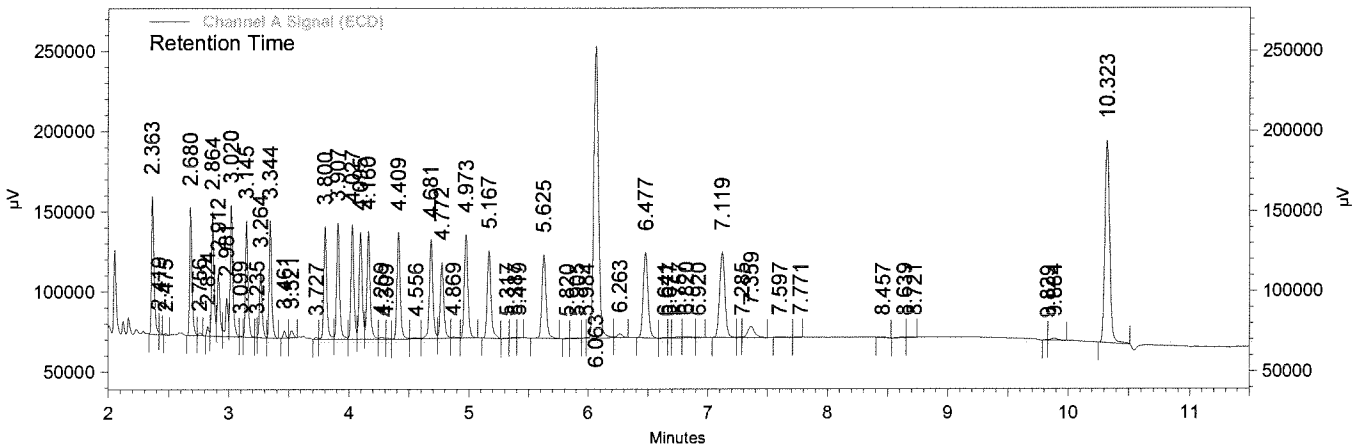

Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.363	6793235	210406.3	32.286	BS
alpha-BHC	2.683	2.680	5800171	332088.1	17.466	BV
gamma-BHC	2.867	2.864	5576264	327031.5	17.051	VV
beta-BHC	2.916	2.912	3313749	191799.2	17.277	VS
delta-BHC	3.023	3.020	6647904	355796.5	18.685	VV
Heptachlor	3.148	3.145	5695866	340376.6	16.734	VV
Aldrin	3.345	3.344	5752426	354684.2	16.218	BB
Heptachlor Epoxide	3.803	3.800	6422191	359106.5	17.884	SV
gamma-Chlordane	3.908	3.907	6784614	392256.3	17.296	VV
alpha-Chlordane	4.029	4.027	6592065	394418.4	16.713	VV
DDE	4.099	4.095	6369338	343789.3	18.527	VV
Endosulfan I	4.163	4.160	6703156	419333.4	15.985	VV
Dieldrin	4.412	4.409	6764596	357645.0	18.914	BV
Endrin	4.684	4.681	6835223	343628.3	19.891	VV
DDD	4.776	4.772	5269635	268752.2	19.608	VV
Endosulfan II	4.976	4.973	7269958	367000.6	19.809	VS
DDT	5.169	5.167	6538766	312997.5	20.891	BB
Endrin aldehyde	5.628	5.625	6970658	326603.1	21.343	SS
Methoxychlor	6.065	6.063	27534486	164669.2	204.964	SV
Endosulfan Sulfate	6.480	6.477	8113620	409015.5	19.837	BB
Endrin Ketone	7.123	7.119	8822287	446868.0	19.742	BV
DCB	10.328	10.323	19184256	567820.8	33.786	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPB025WC
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19032.dat
User: ESanto
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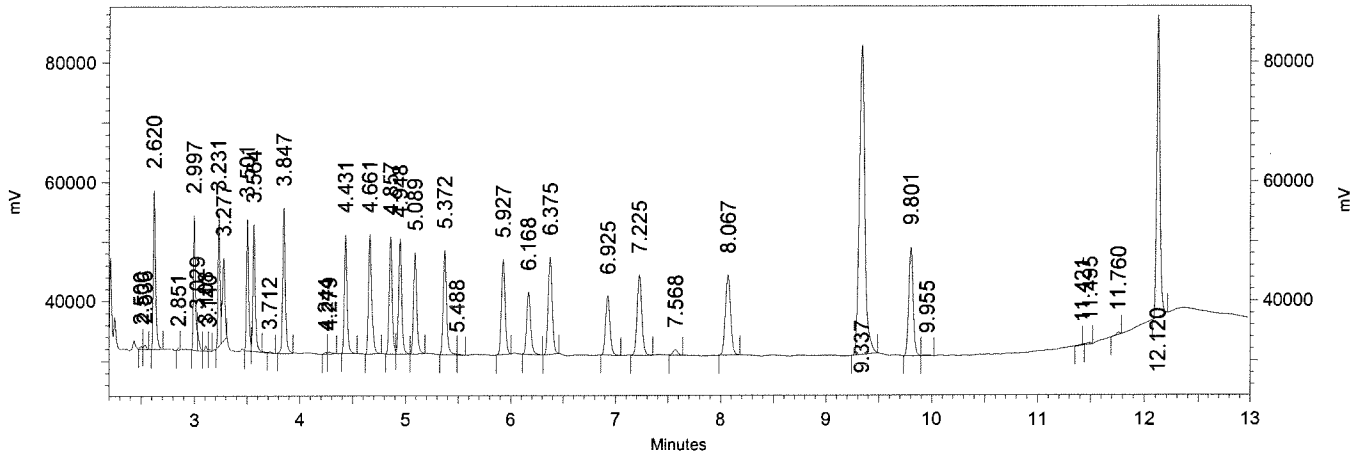
Printed: 02/22/16 14:46:56



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.620	2096255	53703.4	39.034	SS
alpha-BHC	3.000	2.997	1624347	72036.4	22.549	IS
gamma-BHC	3.233	3.231	1521001	79373.3	19.163	SV
beta-BHC	3.283	3.277	1280163	51602.9	24.808	VI
delta-BHC	3.505	3.501	1725399	77332.0	22.312	BV
Heptachlor	3.567	3.564	1772688	87869.0	20.174	VS
Aldrin	3.849	3.847	2302025	103752.3	22.188	SS
Heptachlor Epoxide	4.433	4.431	1975255	97064.9	20.350	SS
gamma-Chlordane	4.664	4.661	2315733	102558.3	22.580	BB
alpha-Chlordane	4.861	4.857	2095417	101533.5	20.638	BV
Endosulfan I	4.951	4.948	2131961	105819.2	20.147	VB
DDE	5.093	5.089	1990375	95539.7	20.833	BS
Dieldrin	5.375	5.372	2155720	99969.4	21.564	BS
Endrin	5.929	5.927	2106467	99144.3	21.246	SB
DDD	6.172	6.168	1501717	66411.8	22.612	BB
Endosulfan II	6.379	6.375	2359973	103675.6	22.763	BI
DDT	6.931	6.925	1592610	74582.2	21.354	BB
Endrin Aldehyde	7.229	7.225	2313750	96524.7	23.971	SB
Endosulfan Sulfate	8.071	8.067	2543325	111570.2	22.796	BS
Methoxychlor	9.343	9.337	10354138	45652.3	244.625	BI
Endrin Ketone	9.807	9.801	2847792	123295.7	23.097	BV
DCB	12.123	12.120	5587683	145864.8	38.307	SB

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TXB005SB
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19033.dat
User: ESanto
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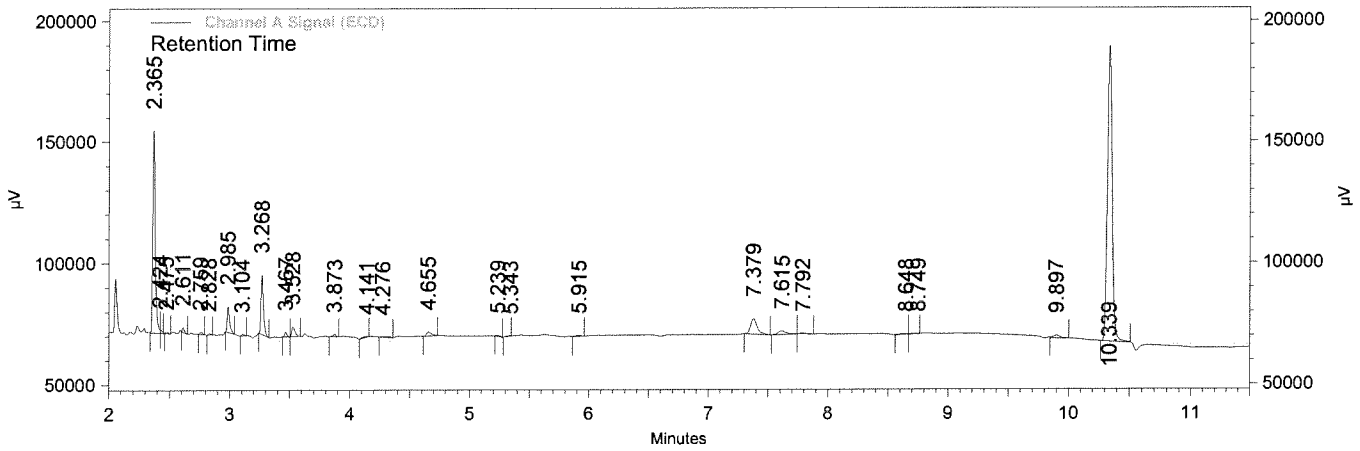
Printed: 02/22/16 14:48:13

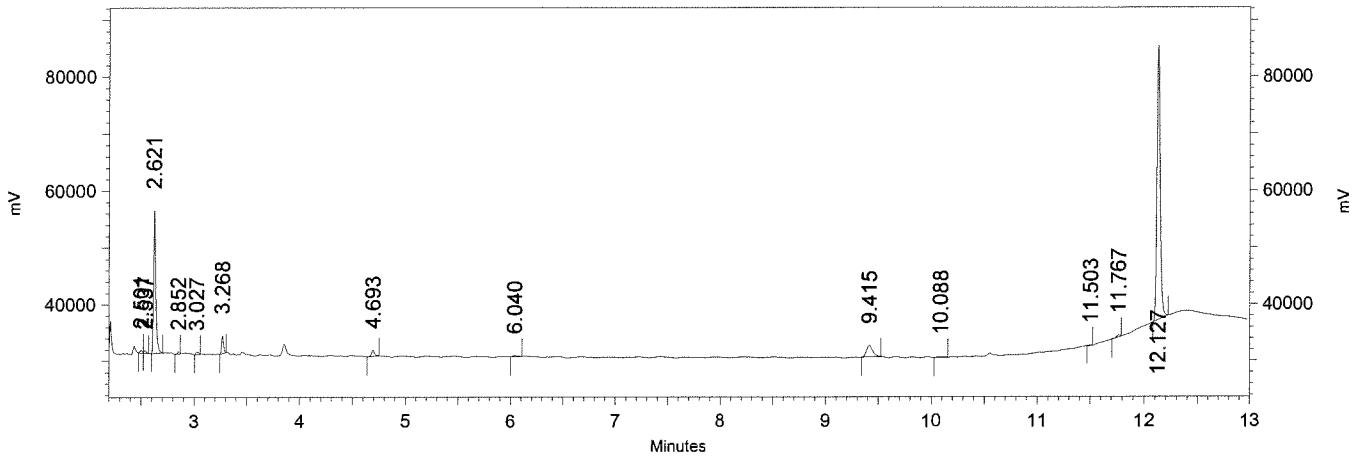


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.365	6570075	210406.3	31.226	BS
alpha-BHC	2.683				0.000 BDL	
gamma-BHC	2.867				0.000 BDL	
beta-BHC	2.916				0.000 BDL	
delta-BHC	3.023				0.000 BDL	
Heptachlor	3.148				0.000 BDL	
Aldrin	3.345				0.000 BDL	
Heptachlor Epoxide	3.803				0.000 BDL	
gamma-Chlordane	3.908				0.000 BDL	
alpha-Chlordane	4.029				0.000 BDL	
DDE	4.099				0.000 BDL	
Endosulfan I	4.163				0.000 BDL	
Dieldrin	4.412				0.000 BDL	
Endrin	4.684				0.000 BDL	
DDD	4.776				0.000 BDL	
Endosulfan II	4.976				0.000 BDL	
DDT	5.169				0.000 BDL	
Endrin aldehyde	5.628				0.000 BDL	
Methoxychlor	6.065				0.000 BDL	
Endosulfan Sulfate	6.480				0.000 BDL	
Endrin Ketone	7.123				0.000 BDL	
DCB	10.328	10.339	18117374	567820.8	31.907	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TXB005SB
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19033.dat
User: ESanto
Acquired: 02/19/16 23:04:09
Printed: 02/22/16 14:48:13



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.621	1965554	53703.4	36.600	SB
alpha-BHC	3.000				0.000 BDL	
gamma-BHC	3.233				0.000 BDL	
beta-BHC	3.283				0.000 BDL	
delta-BHC	3.505				0.000 BDL	
Heptachlor	3.567				0.000 BDL	
Aldrin	3.849				0.000 BDL	
Heptachlor Epoxide	4.433				0.000 BDL	
gamma-Chlordane	4.664				0.000 BDL	
alpha-Chlordane	4.861				0.000 BDL	
Endosulfan I	4.951				0.000 BDL	
DDE	5.093				0.000 BDL	
Dieldrin	5.375				0.000 BDL	
Endrin	5.929				0.000 BDL	
DDD	6.172				0.000 BDL	
Endosulfan II	6.379				0.000 BDL	
DDT	6.931				0.000 BDL	
Endrin Aldehyde	7.229				0.000 BDL	
Endosulfan Sulfate	8.071				0.000 BDL	
Methoxychlor	9.343				0.000 BDL	
Endrin Ketone	9.807				0.000 BDL	
DCB	12.123	12.127	5326497	145864.8	36.517	SB

INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
LFID & Datetime: RA20017A 01/20/16 21:00 RA20025A 01/20/16 23:42
LFID & Datetime: RA20018A 01/20/16 21:20 RA20026A 01/21/16 00:03
LFID & Datetime: RA20019A 01/20/16 21:40 RA20027A 01/21/16 00:23
LFID & Datetime: RA20020A 01/20/16 22:01 RA20028A 01/21/16 00:44
LFID & Datetime: RA20021A 01/20/16 22:21 RA20029A 01/21/16 01:04
LFID & Datetime: RA20022A 01/20/16 22:41 RA20030A 01/21/16 01:25
LFID & Datetime: RA20023A 01/20/16 23:01 RA20031A 01/21/16 01:45
LFID & Datetime: RA20024A 01/20/16 23:22 RA20032A 01/21/16 02:06
CONC UNIT : ppb
Method Name : CPF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
alpha-BHC	1.25	330894	337329	331538	341580	354234	325781	327241	308106	332088.0	4.0
gamma-BHC	1.25	335575	347718	330456	340429	343160	309248	318745	290922	327031.5	5.9
beta-BHC	1.25	197482	215988	201494	200905	199852	177832	178524	162316	191799.2	9.0
delta-BHC	1.25	346330	369550	348034	362808	378696	348935	360330	331690	355796.5	4.2
Heptachlor	1.25	345027	391009	352596	355170	352107	314347	321117	291640	340376.6	9.0
Aldrin	1.25	372859	393493	362179	369419	365195	329439	337690	307200	354684.2	7.8
Heptachlor Epoxide	1.25	380904	403468	375099	377590	376714	334917	327820	296340	359106.5	9.9
gamma-Chlordane	1.25	399430	428843	416996	412734	407768	369689	366651	335939	392256.3	8.1
alpha-Chlordane	1.25	422936	448672	417549	413813	402141	361988	358571	329677	394418.4	10.2
DDE	2.50	345052	377590	353312	357493	356580	326081	327798	306410	343789.3	6.6
Endosulfan I	1.25	421966	482646	467142	458490	431064	382271	372253	338836	419333.4	12.1
Dieldrin	2.50	397148	390877	379798	386255	366324	326542	320367	293850	357644.9	10.8
Endrin	2.50	383767	390570	369527	373556	350513	307930	298938	274226	343628.3	12.8
DDD	2.50	258555	253775	278853	291687	283646	263987	266707	252808	268752.2	5.4
Endosulfan II	2.50	403793	412517	407990	401224	371106	326747	318754	293873	367000.6	12.9
DDT	2.50	299646	348187	326303	330408	319686	295150	299564	285035	312997.5	6.9
Endrin Aldehyde	2.50	363165	369637	368047	355348	329008	286388	280272	260960	326603.0	13.6
Methoxychlor	12.50	185714	190357	177230	164017	146220	124477	0	0	164669.2	15.4
Endosulfan Sulfate	2.50	459079	474519	455628	434761	406765	358517	352778	330078	409015.5	13.6
Endrin Ketone	2.50	487572	500072	487435	479166	451744	404371	395296	369288	446867.9	11.2
Oxychlordane	1.25	409579	395588	378507	356047	334646	306986	283968	263860	341147.6	15.6
2,4'-DDE	1.25	285049	287995	294067	266495	270279	265431	242796	230138	267781.1	8.3
trans-Nonachlor	1.25	588094	536052	511545	493443	468414	438827	405510	384154	478254.9	14.3
2,4'-DDD	1.25	251008	257919	256914	236132	223817	219017	207494	198841	231392.7	9.8
2,4'-DDT	1.25	300907	289844	291096	281583	279225	262732	251993	241417	274849.4	7.6
cis-Nonachlor	1.25	598406	582790	567206	537682	522784	485885	460156	436083	523874.0	11.2
Mirex	1.25	572548	526648	512253	476925	456075	400558	376451	351226	459085.4	17.0

SURROGATE	X	1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
TCX	1.25	205044	215602	227332	225193	225524	192835	201271	190449	210406.3	7.1
DCB	1.25	627516	650358	658420	618656	560693	497771	476722	452431	567820.8	14.5

01-29-16

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INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
LFID & Datetime: RA20017B 01/20/16 21:00 RA20025B 01/20/16 23:42
LFID & Datetime: RA20018B 01/20/16 21:20 RA20026B 01/21/16 00:03
LFID & Datetime: RA20019B 01/20/16 21:40 RA20027B 01/21/16 00:23
LFID & Datetime: RA20020B 01/20/16 22:01 RA20028B 01/21/16 00:44
LFID & Datetime: RA20021B 01/20/16 22:21 RA20029B 01/21/16 01:04
LFID & Datetime: RA20022B 01/20/16 22:41 RA20030B 01/21/16 01:25
LFID & Datetime: RA20023B 01/20/16 23:01 RA20031B 01/21/16 01:45
LFID & Datetime: RA20024B 01/20/16 23:22 RA20032B 01/21/16 02:06
CONC UNIT : ppb
Method Name : CPF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
alpha-BHC	1.25	58567	65443	65790	70244	77211	76274	83363	79398	72036.4	11.7
gamma-BHC	1.25	74810	80681	73726	77372	82236	79199	86072	80889	79373.3	5.1
beta-BHC	1.25	47418	59453	55442	54641	52862	48208	49738	45061	51602.9	9.3
delta-BHC	1.25	65544	71762	68982	74317	82337	80749	89531	85433	77332.0	10.9
Heptachlor	1.25	79078	94458	84739	89839	94992	86537	89867	83441	87869.0	6.2
Aldrin	1.25	123732	118756	99043	99011	100652	94782	100727	93314	103752.3	10.8
Heptachlor Epoxide	1.25	94105	108274	94809	99640	100257	92325	96338	90773	97064.9	5.8
gamma-Chlordane	1.25	98650	113066	100941	103435	105588	98008	102817	97961	102558.3	4.9
alpha-Chlordane	1.25	95341	107688	101036	103798	105076	98174	103220	97935	101533.5	4.1
DDE	2.50	89030	98260	91561	95185	98680	94989	100137	96477	95539.7	3.9
Endosulfan I	1.25	107402	118086	105537	107257	107259	99660	103462	97891	105819.2	5.8
Dieldrin	2.50	99048	106033	97260	99998	102722	96683	101217	96795	99969.4	3.3
Endrin	2.50	104828	107909	99248	101236	101272	92804	95595	90262	99144.3	6.0
DDD	2.50	57878	67922	62570	64633	68191	66478	72250	71372	66411.8	7.1
Endosulfan II	2.50	108087	112773	103608	104646	106296	97565	100397	96033	103675.6	5.4
DDT	2.50	66343	72109	71883	74641	77451	75009	80238	78983	74582.2	6.0
Endrin Aldehyde	2.50	104622	106354	102384	100356	96469	87502	89645	84866	96524.7	8.5
Methoxychlor	12.50	46332	48237	46566	47001	44563	41215	0	0	45652.3	5.4
Endosulfan Sulfate	2.50	113666	120694	115648	116256	113873	104055	106405	101965	111570.2	5.9
Endrin Ketone	2.50	128174	131965	126218	127019	124677	116422	118020	113871	123295.7	5.2
Oxychlordane	1.25	114914	107895	103081	100926	98632	93551	88404	84196	98949.8	10.2
2,4'-DDE	1.25	73000	77349	78380	73531	72825	70879	67758	65119	72355.1	6.2
trans-Nonachlor	1.25	143586	147507	138895	133675	130698	126465	121835	116945	132451.0	8.0
2,4'-DDD	1.25	64763	58215	62206	57914	60491	57757	56534	55205	59135.7	5.3
2,4'-DDT	1.25	51262	57402	61833	63412	65767	65654	65799	64261	61923.8	8.3
cis-Nonachlor	1.25	138121	139592	143440	140243	142101	138948	135024	131267	138591.9	2.8
Mirex	1.25	141764	134472	142655	133207	133076	120128	113130	108361	128349.0	10.1
SURROGATE	X	1.00X	2.00X	4.00X	8.00X	16.00X	32.00X	48.00X	64.00X	MEAN	%RSD
TCX	1.25	57480	57464	55702	55881	54886	49791	50958	47465	53703.4	7.0
DCB	1.25	147393	156816	192460	158688	140065	128437	124354	118706	145864.8	16.4

pm 01-29-16

INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
LFID & Datetime: RA20017A 01/20/16 21:00 RA20025A 01/20/16 23:42
LFID & Datetime: RA20018A 01/20/16 21:20 RA20026A 01/21/16 00:03
LFID & Datetime: RA20019A 01/20/16 21:40 RA20027A 01/21/16 00:23
LFID & Datetime: RA20020A 01/20/16 22:01 RA20028A 01/21/16 00:44
LFID & Datetime: RA20021A 01/20/16 22:21 RA20029A 01/21/16 01:04
LFID & Datetime: RA20022A 01/20/16 22:41 RA20030A 01/21/16 01:25
LFID & Datetime: RA20023A 01/20/16 23:01 RA20031A 01/21/16 01:45
LFID & Datetime: RA20024A 01/20/16 23:22 RA20032A 01/21/16 02:06
Method Name : CPF9A20.met

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
alpha-BHC	2.695	2.697	2.693	2.691	2.697	2.692	2.695	2.703	2.695	2.675	2.715	0.020
gamma-BHC	2.879	2.881	2.879	2.873	2.883	2.877	2.879	2.888	2.880	2.858	2.902	0.022
beta-BHC	2.929	2.932	2.928	2.923	2.931	2.925	2.927	2.936	2.929	2.907	2.951	0.022
delta-BHC	3.037	3.040	3.036	3.031	3.040	3.033	3.035	3.044	3.037	3.016	3.058	0.021
Heptachlor	3.163	3.167	3.163	3.157	3.167	3.161	3.161	3.171	3.164	3.140	3.188	0.024
Aldrin	3.361	3.365	3.363	3.356	3.367	3.361	3.361	3.371	3.363	3.337	3.389	0.026
Heptachlor Epoxide	3.821	3.827	3.823	3.813	3.828	3.821	3.820	3.831	3.823	3.793	3.853	0.030
gamma-Chlordane	3.929	3.933	3.931	3.921	3.935	3.929	3.928	3.939	3.931	3.899	3.963	0.032
alpha-Chlordane	4.051	4.055	4.053	4.041	4.057	4.051	4.049	4.060	4.052	4.020	4.084	0.032
DDE	4.124	4.128	4.127	4.115	4.129	4.121	4.119	4.131	4.124	4.092	4.156	0.032
Endosulfan I	4.185	4.191	4.188	4.176	4.192	4.187	4.184	4.195	4.187	4.152	4.222	0.035
Dieldrin	4.436	4.443	4.440	4.428	4.445	4.440	4.436	4.448	4.439	4.407	4.471	0.032
Endrin	4.711	4.717	4.715	4.701	4.720	4.715	4.709	4.723	4.714	4.684	4.744	0.030
DDD	4.808	4.815	4.812	4.797	4.815	4.808	4.801	4.815	4.809	4.779	4.839	0.030
Endosulfan II	5.004	5.011	5.011	4.995	5.015	5.009	5.003	5.016	5.008	4.979	5.037	0.029
DDT	5.204	5.211	5.209	5.191	5.212	5.207	5.197	5.212	5.205	5.175	5.235	0.030
Endrin Aldehyde	5.663	5.669	5.669	5.652	5.673	5.669	5.659	5.675	5.666	5.634	5.698	0.032
Methoxychlor	6.109	6.117	6.117	6.096	6.121	6.113			6.112	6.074	6.150	0.038
Endosulfan Sulfate	6.520	6.531	6.529	6.509	6.535	6.529	6.517	6.535	6.526	6.490	6.562	0.036
Endrin Ketone	7.165	7.176	7.175	7.153	7.181	7.176	7.163	7.181	7.171	7.135	7.207	0.036
Oxychlordane	3.744	3.735	3.739	3.739	3.733	3.748	3.740	3.728	3.738	3.719	3.757	0.019
2,4'-DDE	3.816	3.807	3.811	3.811	3.805	3.819	3.811	3.797	3.810	3.788	3.832	0.022
trans-Nonachlor	4.040	4.031	4.036	4.036	4.031	4.045	4.037	4.024	4.035	4.012	4.058	0.023
2,4'-DDD	4.308	4.299	4.304	4.304	4.296	4.312	4.305	4.289	4.302	4.277	4.327	0.025
2,4'-DDT	4.595	4.584	4.589	4.591	4.581	4.599	4.592	4.576	4.588	4.565	4.611	0.023
cis-Nonachlor	4.763	4.751	4.757	4.759	4.749	4.767	4.760	4.744	4.756	4.734	4.778	0.022
Mirex	6.269	6.251	6.261	6.264	6.248	6.271	6.267	6.244	6.259	6.231	6.287	0.028

SURROGATE	1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	RT	FROM	TO	WIDTH
TCX	2.376	2.379	2.375	2.372	2.377	2.372	2.376	2.383	2.376	2.356	2.396	0.020
DCB	10.363	10.368	10.369	10.351	10.373	10.372	10.359	10.375	10.366	10.316	10.416	0.050

1-29-16

INITIAL CALIBRATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
LFID & Datetime: RA20017B 01/20/16 21:00 RA20025B 01/20/16 23:42
LFID & Datetime: RA20018B 01/20/16 21:20 RA20026B 01/21/16 00:03
LFID & Datetime: RA20019B 01/20/16 21:40 RA20027B 01/21/16 00:23
LFID & Datetime: RA20020B 01/20/16 22:01 RA20028B 01/21/16 00:44
LFID & Datetime: RA20021B 01/20/16 22:21 RA20029B 01/21/16 01:04
LFID & Datetime: RA20022B 01/20/16 22:41 RA20030B 01/21/16 01:25
LFID & Datetime: RA20023B 01/20/16 23:01 RA20031B 01/21/16 01:45
LFID & Datetime: RA20024B 01/20/16 23:22 RA20032B 01/21/16 02:06
Method Name : CPF9A20.met

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
alpha-BHC	3.009	3.011	3.007	3.005	3.012	3.005	3.009	3.016	3.009	2.991	3.027	0.018
gamma-BHC	3.244	3.247	3.243	3.240	3.247	3.240	3.244	3.252	3.245	3.228	3.262	0.017
beta-BHC	3.293	3.296	3.292	3.288	3.296	3.288	3.292	3.300	3.293	3.276	3.310	0.017
delta-BHC	3.516	3.519	3.515	3.511	3.520	3.512	3.516	3.523	3.516	3.500	3.533	0.017
Heptachlor	3.579	3.581	3.577	3.573	3.583	3.575	3.579	3.585	3.579	3.561	3.597	0.018
Aldrin	3.863	3.864	3.861	3.856	3.867	3.859	3.863	3.869	3.863	3.844	3.882	0.019
Heptachlor Epoxide	4.449	4.452	4.448	4.443	4.453	4.445	4.449	4.457	4.449	4.426	4.472	0.023
gamma-Chlordane	4.683	4.684	4.680	4.675	4.685	4.679	4.680	4.689	4.682	4.661	4.703	0.021
alpha-Chlordane	4.879	4.880	4.877	4.872	4.883	4.876	4.877	4.885	4.879	4.861	4.897	0.018
DDE	5.116	5.116	5.115	5.107	5.119	5.111	5.111	5.119	5.114	5.098	5.130	0.016
Endosulfan I	4.969	4.972	4.968	4.963	4.973	4.967	4.968	4.977	4.970	4.951	4.989	0.019
Dieldrin	5.395	5.397	5.395	5.388	5.401	5.393	5.393	5.403	5.396	5.379	5.413	0.017
Endrin	5.952	5.955	5.952	5.945	5.959	5.951	5.951	5.960	5.953	5.933	5.973	0.020
DDD	6.201	6.201	6.200	6.191	6.204	6.195	6.193	6.203	6.199	6.180	6.218	0.019
Endosulfan II	6.404	6.405	6.403	6.396	6.408	6.401	6.401	6.411	6.404	6.382	6.426	0.022
DDT	6.960	6.960	6.960	6.949	6.963	6.956	6.955	6.963	6.958	6.934	6.982	0.024
Endrin Aldehyde	7.259	7.260	7.259	7.249	7.264	7.256	7.255	7.264	7.258	7.236	7.280	0.022
Methoxychlor	9.376	9.373	9.375	9.364	9.376	9.371			9.373	9.345	9.401	0.028
Endosulfan Sulfate	8.104	8.105	8.104	8.093	8.109	8.103	8.100	8.109	8.103	8.079	8.127	0.024
Endrin Ketone	9.833	9.829	9.832	9.823	9.835	9.831	9.829	9.835	9.831	9.801	9.861	0.030
Oxychlordane	4.344	4.340	4.341	4.340	4.340	4.349	4.341	4.333	4.341	4.321	4.361	0.020
2,4'-DDE	4.672	4.667	4.668	4.667	4.665	4.676	4.667	4.657	4.667	4.646	4.688	0.021
trans-Nonachlor	4.804	4.799	4.800	4.799	4.799	4.809	4.800	4.792	4.800	4.782	4.818	0.018
2,4'-DDD	5.455	5.449	5.449	5.449	5.447	5.457	5.449	5.440	5.449	5.431	5.467	0.018
2,4'-DDT	6.039	6.033	6.033	6.035	6.031	6.043	6.035	6.024	6.034	6.015	6.053	0.019
cis-Nonachlor	6.124	6.117	6.117	6.119	6.115	6.127	6.120	6.109	6.118	6.100	6.136	0.018
Mirex	9.643	9.636	9.636	9.636	9.635	9.643	9.639	9.629	9.637	9.613	9.661	0.024

SURROGATE	1.0X	2.0X	4.0X	8.0X	16.0X	32.0X	48.0X	64.0X	RT	FROM	TO	WIDTH
TCX	2.631	2.633	2.628	2.627	2.632	2.625	2.631	2.637	2.630	2.607	2.653	0.023
DCB	12.144	12.135	12.139	12.133	12.137	12.137	12.137	12.140	12.138	12.103	12.173	0.035

1-29-16

PEM PEST BREAKDOWN CALCULATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.32UM 30MX0.32MMIDX0.25UM
PEM LFID & Datetime : RA20007A RA20007B 01/20/16 17:37

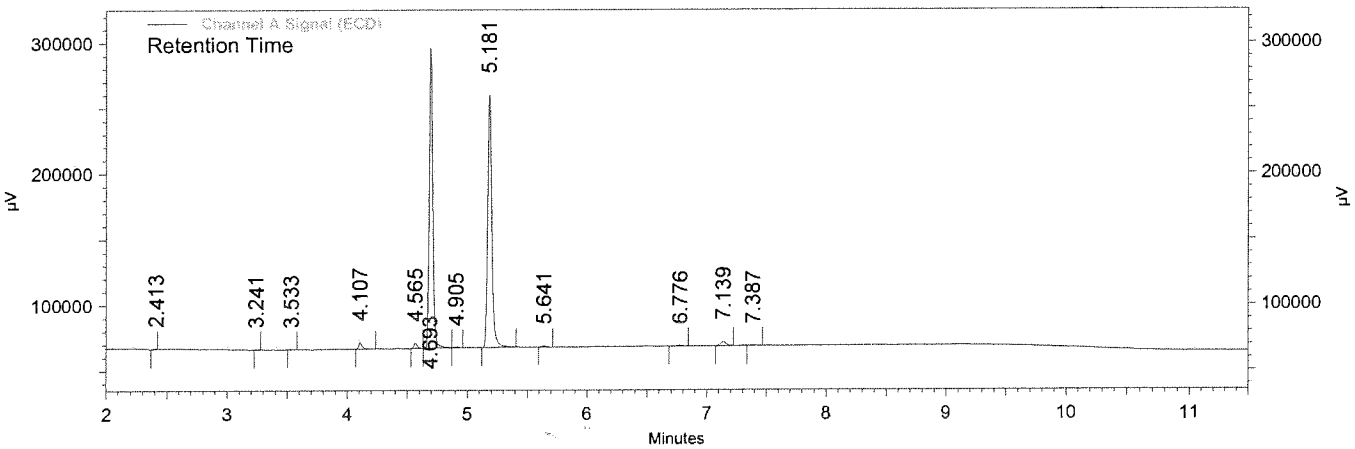
Base on AREA

	AREA				% Breakdown				
LFID	DDD	DDE	DDT	TOTAL	DDD	DDE	TOTAL	QL	QCLIMIT
RA20007A	0.0	554020.0	25254676.0	25808696.0	0.00	2.15	2.15		15
RA20007B	0.0	144663.0	7151509.0	7296172.0	0.00	1.98	1.98		15
LFID	ENDRIN	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	QL	QCLIMIT
RA20007A	25924992.0	101759.0	508844.0	26535596.0	0.38	1.92	2.30		15
RA20007B	8795345.0	26540.0	147059.0	8968944.0	0.30	1.64	1.94		15

1-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2001
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20007.dat
User: ESanto
Acquired: 01/20/16 17:37:19
Printed: 01/21/16 16:05:13



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376				0.000 BDL	
alpha-BHC	2.695				0.000 BDL	
gamma-BHC	2.879				0.000 BDL	
beta-BHC	2.927				0.000 BDL	
delta-BHC	3.035				0.000 BDL	
Heptachlor	3.163				0.000 BDL	
Aldrin	3.363				0.000 BDL	
Heptachlor Epoxide	3.821				0.000 BDL	
gamma-Chlordane	3.929				0.000 BDL	
alpha-Chlordane	4.049				0.000 BDL	
DDE	4.119	4.107	554020	343789.3	1.612	BB
Endosulfan I	4.185				0.000 BDL	
Dieldrin	4.436				0.000 BDL	
Endrin	4.711	4.693	25924993	343628.3	75.445	BV
DDD	4.801				0.000 BDL	
Endosulfan II	5.004				0.000 BDL	
DDT	5.199	5.181	25254675	312997.5	80.687	BS
Endrin aldehyde	5.661	5.641	101759	326603.1	0.312	BB
Methoxychlor	6.103				0.000 BDL	
Endosulfan Sulfate	6.519				0.000 BDL	
Endrin Ketone	7.164	7.139	508844	446868.0	1.139	BS
DCB	10.360				0.000 BDL	

RW 1-29-16

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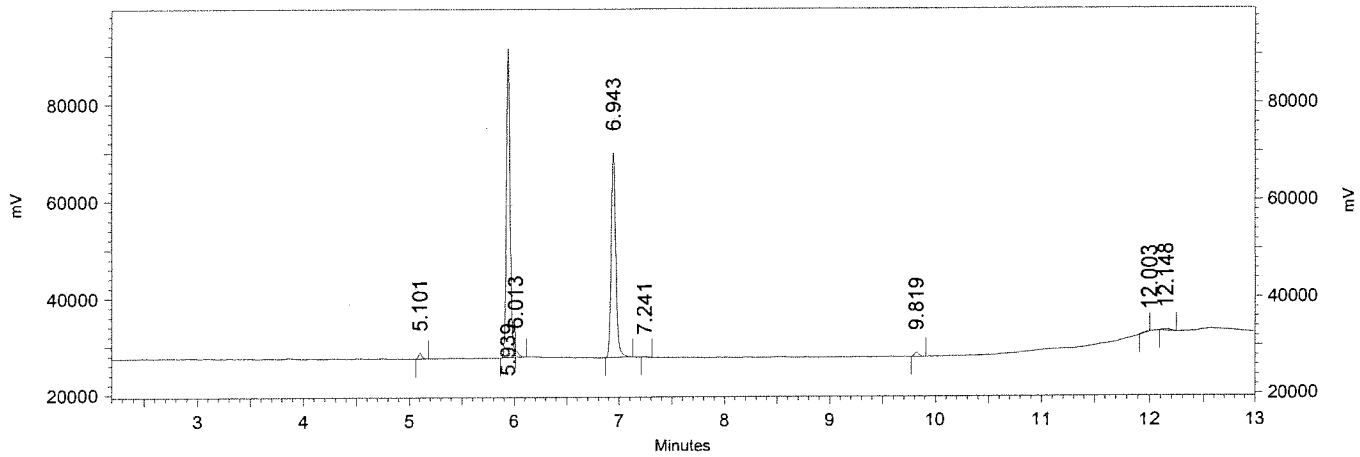
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2001
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20007.dat
User: ESanto
Acquired: 01/20/16 17:37:19
Printed: 01/21/16 16:05:13



Channel B Signal (ECD) Results

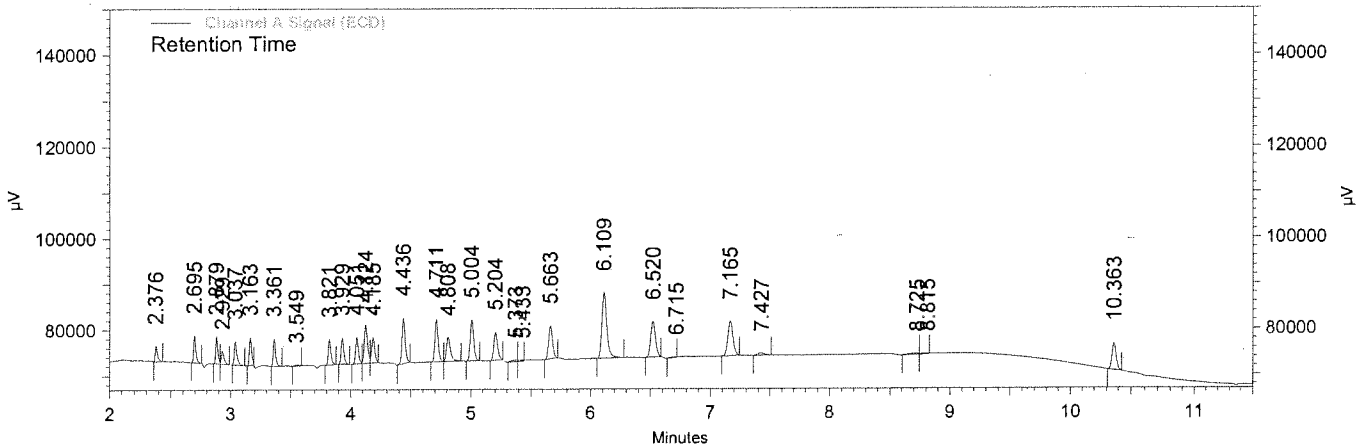
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631				0.000 BDL	
alpha-BHC	3.009				0.000 BDL	
gamma-BHC	3.245				0.000 BDL	
beta-BHC	3.292				0.000 BDL	
delta-BHC	3.516				0.000 BDL	
Heptachlor	3.579				0.000 BDL	
Aldrin	3.863				0.000 BDL	
Heptachlor Epoxide	4.449				0.000 BDL	
gamma-Chlordane	4.680				0.000 BDL	
alpha-Chlordane	4.877				0.000 BDL	
Endosulfan I	4.968				0.000 BDL	
DDE	5.109	5.101	144663	95539.7	1.514	BB
Dieldrin	5.395				0.000 BDL	
Endrin	5.951	5.939	8795345	99144.3	88.713	SS
DDD	6.192				0.000 BDL	
Endosulfan II	6.401				0.000 BDL	
DDT	6.953	6.943	7151509	74582.2	95.888	BS
Endrin Aldehyde	7.255	7.241	26540	96524.7	0.275	BB
Endosulfan Sulfate	8.097				0.000 BDL	
Methoxychlor	9.365				0.000 BDL	
Endrin Ketone	9.825	9.819	147059	123295.7	1.193	BB
DCB	12.132	12.148	86846	145864.8	0.595	BI

TW 1-29-16

713

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2001 (1.25/2.5/12.5ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20017.dat
User: ESanto
Acquired: 01/20/16 21:00:02
Printed: 01/21/16 15:42:08



Channel A Signal (ECD) Results

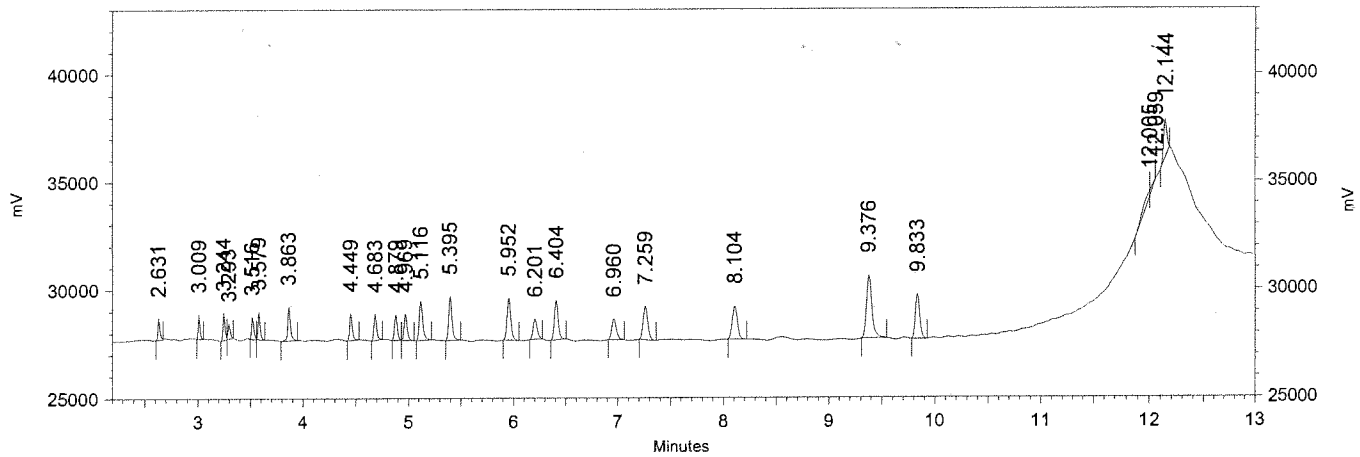
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.376	256305	210406.3	1.250 CAL	BI
alpha-BHC	2.695	2.695	413618	332088.1	1.250 CAL	BI
gamma-BHC	2.879	2.879	419469	327031.5	1.250 CAL	BV
beta-BHC	2.927	2.929	246853	191799.2	1.250 CAL	VI
delta-BHC	3.035	3.037	432912	355796.5	1.250 CAL	BB
Heptachlor	3.163	3.163	431284	340376.6	1.250 CAL	BI
Aldrin	3.363	3.361	466074	354684.2	1.250 CAL	BB
Heptachlor Epoxide	3.821	3.821	476130	359106.5	1.250 CAL	BI
gamma-Chlordane	3.929	3.929	499288	392256.3	1.250 CAL	IB
alpha-Chlordane	4.049	4.051	528670	394418.4	1.250 CAL	BV
DDE	4.119	4.124	862629	343789.3	2.500 CAL	VV
Endosulfan I	4.185	4.185	527457	419333.4	1.250 CAL	VI
Dieldrin	4.436	4.436	992869	357645.0	2.500 CAL	BI
Endrin	4.711	4.711	959417	343628.3	2.500 CAL	BV
DDD	4.801	4.808	646387	268752.2	2.500 CAL	VB
Endosulfan II	5.004	5.004	1009483	367000.6	2.500 CAL	BI
DDT	5.199	5.204	749114	312997.5	2.500 CAL	BI
Endrin aldehyde	5.661	5.663	907913	326603.1	2.500 CAL	SI
Methoxychlor	6.103	6.109	2321426	164669.2	12.500 CAL	BB
Endosulfan Sulfate	6.519	6.520	1147698	409015.5	2.500 CAL	SI
Endrin Ketone	7.164	7.165	1218929	446868.0	2.500 CAL	BI
DCB	10.360	10.363	784395	567820.8	1.250 CAL	BI

RC 01-29-16

714

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2001 (1.25/2.5/12.5ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20017.dat
User: ESanto
Acquired: 01/20/16 21:00:02
Printed: 01/21/16 15:42:08



Channel B Signal
(ECD) Results

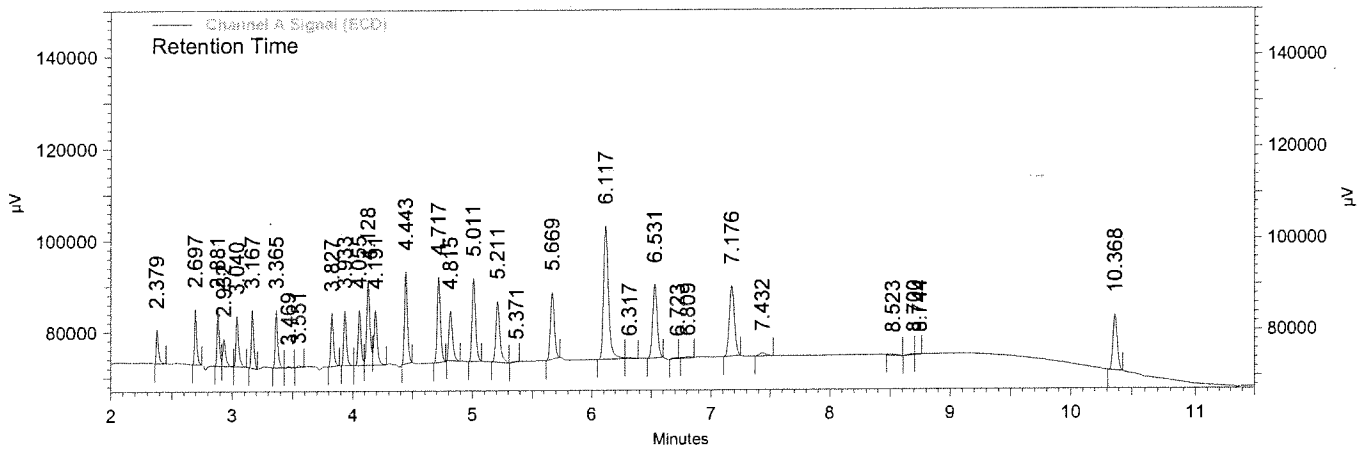
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.631	71850	53703.4	1.250 CAL	BB
alpha-BHC	3.009	3.009	73209	72036.4	1.250 CAL	BB
gamma-BHC	3.245	3.244	93513	79373.3	1.250 CAL	SV
beta-BHC	3.292	3.293	59273	51602.9	1.250 CAL	VI
delta-BHC	3.516	3.516	81930	77332.0	1.250 CAL	BV
Heptachlor	3.579	3.579	98848	87869.0	1.250 CAL	VB
Aldrin	3.863	3.863	154665	103752.3	1.250 CAL	SB
Heptachlor Epoxide	4.449	4.449	117631	97064.9	1.250 CAL	SB
gamma-Chlordane	4.680	4.683	123312	102558.3	1.250 CAL	BB
alpha-Chlordane	4.877	4.879	119176	101533.5	1.250 CAL	BV
Endosulfan I	4.968	4.969	134253	105819.2	1.250 CAL	VB
DDE	5.109	5.116	222575	95539.7	2.500 CAL	BB
Dieldrin	5.395	5.395	247620	99969.4	2.500 CAL	BS
Endrin	5.951	5.952	262069	99144.3	2.500 CAL	BB
DDD	6.192	6.201	144694	66411.8	2.500 CAL	BS
Endosulfan II	6.401	6.404	270218	103675.6	2.500 CAL	BB
DDT	6.953	6.960	165858	74582.2	2.500 CAL	BS
Endrin Aldehyde	7.255	7.259	261556	96524.7	2.500 CAL	BB
Endosulfan Sulfate	8.097	8.104	284165	111570.2	2.500 CAL	BB
Methoxychlor	9.365	9.376	579147	45652.3	12.500 CAL	BB
Endrin Ketone	9.825	9.833	320435	123295.7	2.500 CAL	BB
DCB	12.132	12.144	184241	145864.8	1.250 CAL	II

TW
01-29-16

715

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2002 (2.5/5/25ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20018.dat
User: ESanto
Acquired: 01/20/16 21:20:24
Printed: 01/21/16 15:42:51



Channel A Signal (ECD) Results

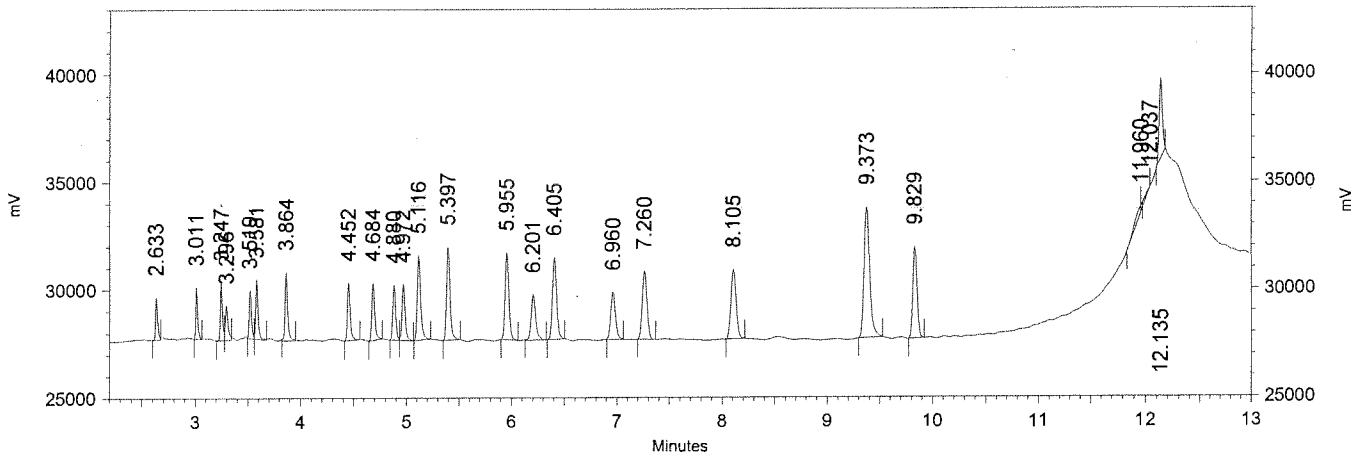
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.379	539004	210406.3	2.500 CAL	BB
alpha-BHC	2.695	2.697	843322	332088.1	2.500 CAL	BI
gamma-BHC	2.879	2.881	869294	327031.5	2.500 CAL	BV
beta-BHC	2.927	2.932	539969	191799.2	2.500 CAL	VV
delta-BHC	3.035	3.040	923874	355796.5	2.500 CAL	VB
Heptachlor	3.163	3.167	977523	340376.6	2.500 CAL	BB
Aldrin	3.363	3.365	983732	354684.2	2.500 CAL	SV
Heptachlor Epoxide	3.821	3.827	1008669	359106.5	2.500 CAL	BI
gamma-Chlordane	3.929	3.933	1072108	392256.3	2.500 CAL	IB
alpha-Chlordane	4.049	4.055	1121680	394418.4	2.500 CAL	BV
DDE	4.119	4.128	1887950	343789.3	5.000 CAL	VV
Endosulfan I	4.185	4.191	1206616	419333.4	2.500 CAL	VB
Dieldrin	4.436	4.443	1954384	357645.0	5.000 CAL	II
Endrin	4.711	4.717	1952850	343628.3	5.000 CAL	BB
DDD	4.801	4.815	1268876	268752.2	5.000 CAL	IS
Endosulfan II	5.004	5.011	2062586	367000.6	5.000 CAL	BI
DDT	5.199	5.211	1740935	312997.5	5.000 CAL	BB
Endrin aldehyde	5.661	5.669	1848183	326603.1	5.000 CAL	SI
Methoxychlor	6.103	6.117	4758921	164669.2	25.000 CAL	BV
Endosulfan Sulfate	6.519	6.531	2372593	409015.5	5.000 CAL	SI
Endrin Ketone	7.164	7.176	2500360	446868.0	5.000 CAL	BI
DCB	10.360	10.368	1625894	567820.8	2.500 CAL	BI

01-29-16

716

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2002 (2.5/5/25ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20018.dat
User: ESanto
Acquired: 01/20/16 21:20:24
Printed: 01/21/16 15:42:51



Channel B Signal
(ECD) Results

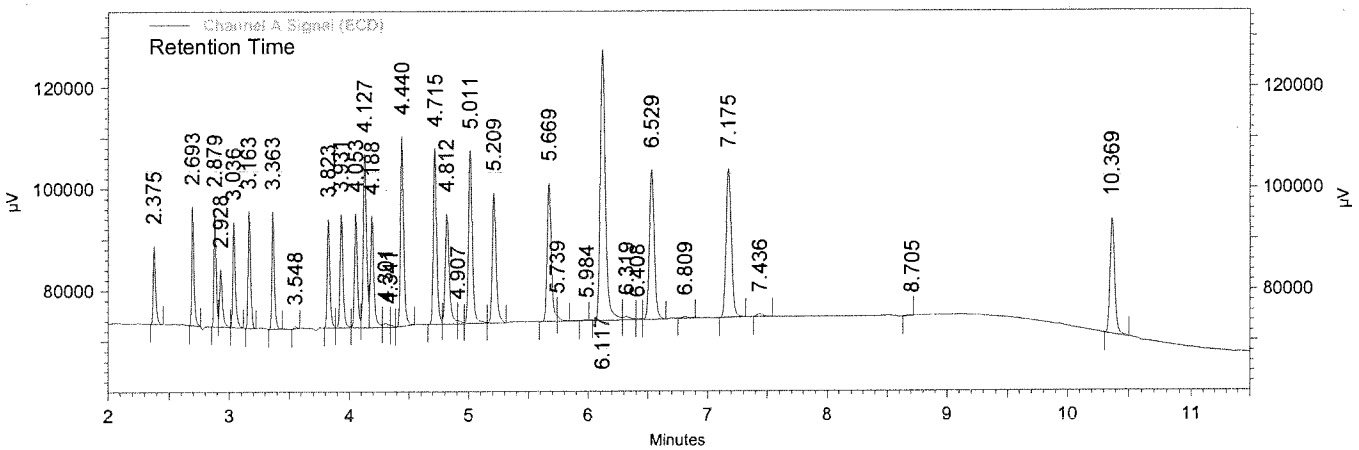
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.633	143659	53703.4	2.500 CAL	SB
alpha-BHC	3.009	3.011	163607	72036.4	2.500 CAL	BS
gamma-BHC	3.245	3.247	201703	79373.3	2.500 CAL	SV
beta-BHC	3.292	3.296	148633	51602.9	2.500 CAL	VS
delta-BHC	3.516	3.519	179404	77332.0	2.500 CAL	BV
Heptachlor	3.579	3.581	236146	87869.0	2.500 CAL	VB
Aldrin	3.863	3.864	296891	103752.3	2.500 CAL	SS
Heptachlor Epoxide	4.449	4.452	270684	97064.9	2.500 CAL	SB
gamma-Chlordane	4.680	4.684	282666	102558.3	2.500 CAL	SS
alpha-Chlordane	4.877	4.880	269220	101533.5	2.500 CAL	BV
Endosulfan I	4.968	4.972	295216	105819.2	2.500 CAL	VB
DDE	5.109	5.116	491300	95539.7	5.000 CAL	BB
Dieldrin	5.395	5.397	530166	99969.4	5.000 CAL	BB
Endrin	5.951	5.955	539545	99144.3	5.000 CAL	BB
DDD	6.192	6.201	339612	66411.8	5.000 CAL	SB
Endosulfan II	6.401	6.405	563867	103675.6	5.000 CAL	BS
DDT	6.953	6.960	360546	74582.2	5.000 CAL	BS
Endrin Aldehyde	7.255	7.260	531769	96524.7	5.000 CAL	BB
Endosulfan Sulfate	8.097	8.105	603469	111570.2	5.000 CAL	BB
Methoxychlor	9.365	9.373	1205937	45652.3	25.000 CAL	BS
Endrin Ketone	9.825	9.829	659824	123295.7	5.000 CAL	BB
DCB	12.132	12.135	392039	145864.8	2.500 CAL	II

01-29-16

717

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2003 (5/10/50ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20019.dat
User: ESanto
Acquired: 01/20/16 21:40:42
Printed: 01/21/16 15:43:27



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.375	1136659	210406.3	5.000 CAL	BS
alpha-BHC	2.695	2.693	1657691	332088.1	5.000 CAL	BI
gamma-BHC	2.879	2.879	1652279	327031.5	5.000 CAL	BV
beta-BHC	2.927	2.928	1007471	191799.2	5.000 CAL	VV
delta-BHC	3.035	3.036	1740168	355796.5	5.000 CAL	VS
Heptachlor	3.163	3.163	1762978	340376.6	5.000 CAL	BB
Aldrin	3.363	3.363	1810896	354684.2	5.000 CAL	SB
Heptachlor Epoxide	3.821	3.823	1875496	359106.5	5.000 CAL	BV
gamma-Chlordane	3.929	3.931	2084980	392256.3	5.000 CAL	VV
alpha-Chlordane	4.049	4.053	2087745	394418.4	5.000 CAL	VV
DDE	4.119	4.127	3533115	343789.3	10.000 CAL	VV
Endosulfan I	4.185	4.188	2335708	419333.4	5.000 CAL	VV
Dieldrin	4.436	4.440	3797982	357645.0	10.000 CAL	BB
Endrin	4.711	4.715	3695270	343628.3	10.000 CAL	SV
DDD	4.801	4.812	2788527	268752.2	10.000 CAL	VS
Endosulfan II	5.004	5.011	4079903	367000.6	10.000 CAL	VV
DDT	5.199	5.209	3263028	312997.5	10.000 CAL	VB
Endrin aldehyde	5.661	5.669	3680468	326603.1	10.000 CAL	SS
Methoxychlor	6.103	6.117	8861475	164669.2	50.000 CAL	SV
Endosulfan Sulfate	6.519	6.529	4556280	409015.5	10.000 CAL	SB
Endrin Ketone	7.164	7.175	4874349	446868.0	10.000 CAL	BB
DCB	10.360	10.369	3292099	567820.8	5.000 CAL	BS

01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2003 (5/10/50ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20019.dat
User: ESanto
Acquired: 01/20/16 21:40:42
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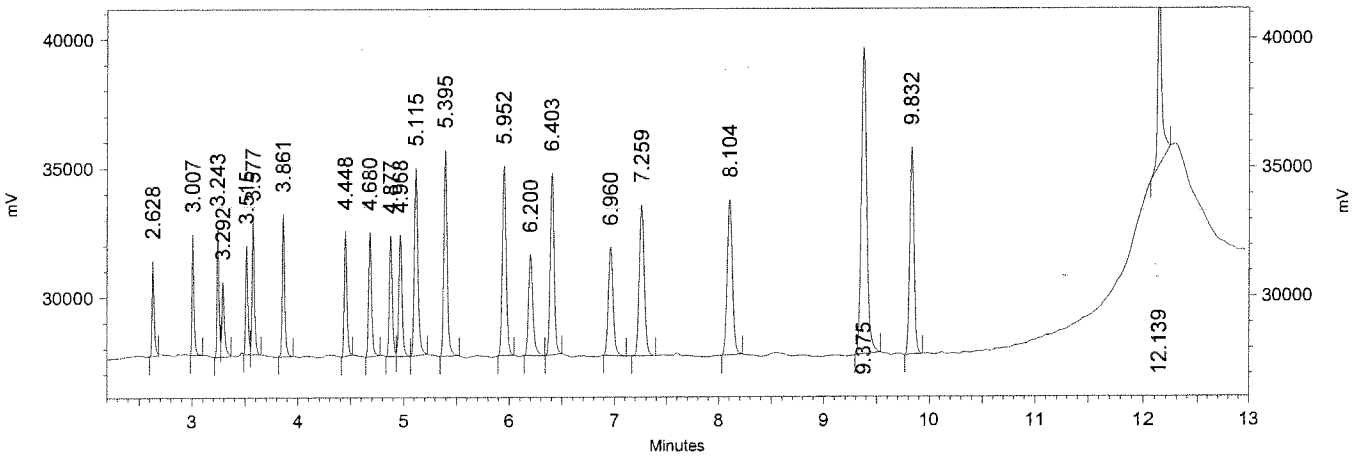


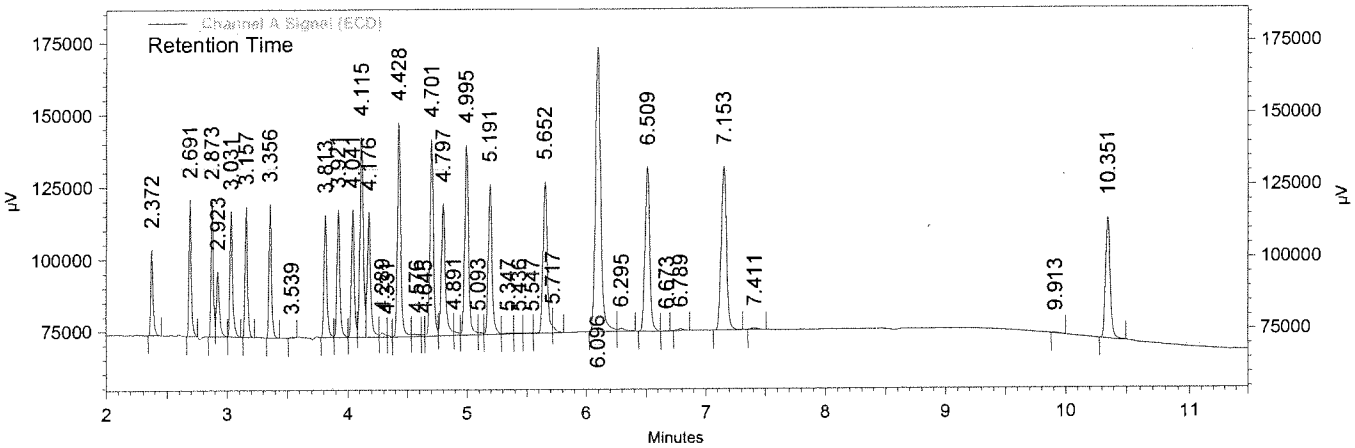
Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.628	278509	53703.4	5.000 CAL	SS
alpha-BHC	3.009	3.007	328952	72036.4	5.000 CAL	BB
gamma-BHC	3.245	3.243	368629	79373.3	5.000 CAL	SV
beta-BHC	3.292	3.292	277211	51602.9	5.000 CAL	VS
delta-BHC	3.516	3.515	344908	77332.0	5.000 CAL	BV
Heptachlor	3.579	3.577	423696	87869.0	5.000 CAL	VS
Aldrin	3.863	3.861	495217	103752.3	5.000 CAL	SS
Heptachlor Epoxide	4.449	4.448	474043	97064.9	5.000 CAL	SS
gamma-Chlordane	4.680	4.680	504705	102558.3	5.000 CAL	BB
alpha-Chlordane	4.877	4.877	505179	101533.5	5.000 CAL	SV
Endosulfan I	4.968	4.968	527685	105819.2	5.000 CAL	VB
DDE	5.109	5.115	915606	95539.7	10.000 CAL	BS
Dieldrin	5.395	5.395	972599	99969.4	10.000 CAL	BB
Endrin	5.951	5.952	992477	99144.3	10.000 CAL	BS
DDD	6.192	6.200	625698	66411.8	10.000 CAL	BB
Endosulfan II	6.401	6.403	1036080	103675.6	10.000 CAL	BS
DDT	6.953	6.960	718832	74582.2	10.000 CAL	BB
Endrin Aldehyde	7.255	7.259	1023840	96524.7	10.000 CAL	SB
Endosulfan Sulfate	8.097	8.104	1156475	111570.2	10.000 CAL	BB
Methoxychlor	9.365	9.375	2328286	45652.3	50.000 CAL	BS
Endrin Ketone	9.825	9.832	1262178	123295.7	10.000 CAL	BB
DCB	12.132	12.139	962302	145864.8	5.000 CAL	II

RE 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2004 (10/20/100ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20020.dat
User: ESanto
Acquired: 01/20/16 22:01:02
Printed: 01/21/16 15:43:44



Channel A Signal (ECD) Results

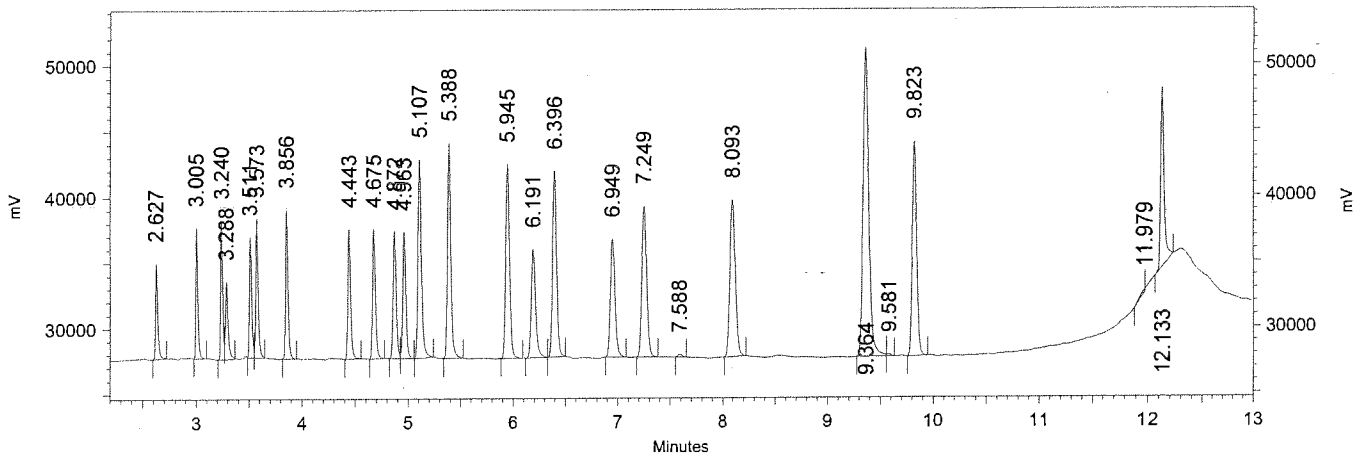
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.372	2251933	210406.3	10.000 CAL	BS
alpha-BHC	2.695	2.691	3415803	332088.1	10.000 CAL	BI
gamma-BHC	2.879	2.873	3404287	327031.5	10.000 CAL	BV
beta-BHC	2.927	2.923	2009045	191799.2	10.000 CAL	VB
delta-BHC	3.035	3.031	3628078	355796.5	10.000 CAL	BS
Heptachlor	3.163	3.157	3551703	340376.6	10.000 CAL	BB
Aldrin	3.363	3.356	3694188	354684.2	10.000 CAL	SB
Heptachlor Epoxide	3.821	3.813	3775896	359106.5	10.000 CAL	IV
gamma-Chlordane	3.929	3.921	4127335	392256.3	10.000 CAL	VV
alpha-Chlordane	4.049	4.041	4138128	394418.4	10.000 CAL	VV
DDE	4.119	4.115	7149853	343789.3	20.000 CAL	VV
Endosulfan I	4.185	4.176	4584902	419333.4	10.000 CAL	VV
Dieldrin	4.436	4.428	7725101	357645.0	20.000 CAL	BV
Endrin	4.711	4.701	7471123	343628.3	20.000 CAL	SV
DDD	4.801	4.797	5833736	268752.2	20.000 CAL	VS
Endosulfan II	5.004	4.995	8024482	367000.6	20.000 CAL	VS
DDT	5.199	5.191	6608167	312997.5	20.000 CAL	VV
Endrin aldehyde	5.661	5.652	7106960	326603.1	20.000 CAL	SS
Methoxychlor	6.103	6.096	16401715	164669.2	100.000 CAL	SV
Endosulfan Sulfate	6.519	6.509	8695217	409015.5	20.000 CAL	BB
Endrin Ketone	7.164	7.153	9583315	446868.0	20.000 CAL	BS
DCB	10.360	10.351	6186556	567820.8	10.000 CAL	BS

RL 01-29-16

726

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2004 (10/20/100ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20020.dat
User: ESanto
Acquired: 01/20/16 22:01:02
Printed: 01/21/16 15:43:44



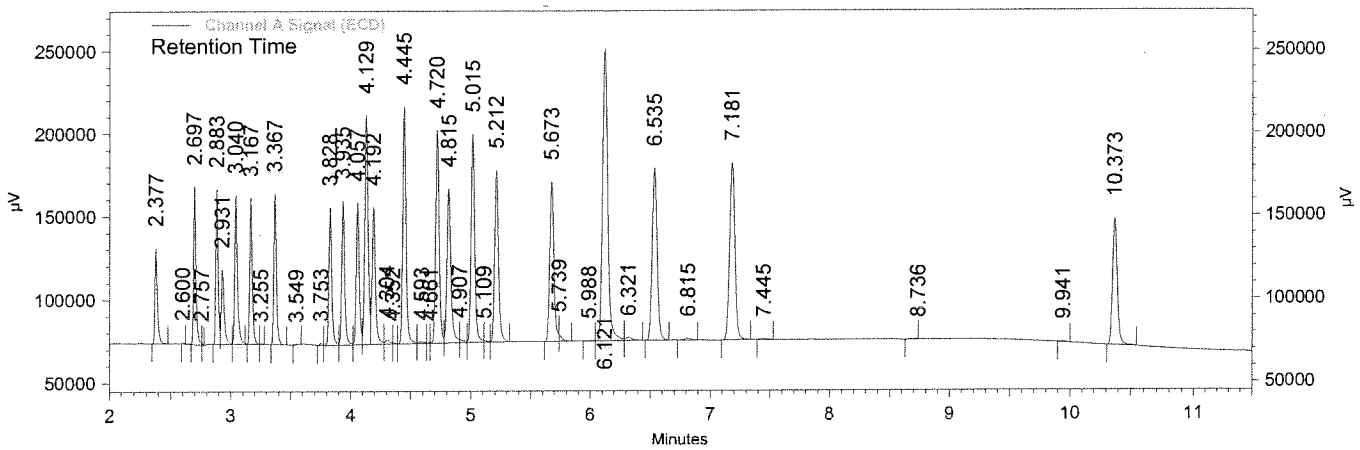
Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.627	558809	53703.4	10.000 CAL	SS
alpha-BHC	3.009	3.005	702439	72036.4	10.000 CAL	BB
gamma-BHC	3.245	3.240	773722	79373.3	10.000 CAL	SV
beta-BHC	3.292	3.288	546405	51602.9	10.000 CAL	VS
delta-BHC	3.516	3.511	743173	77332.0	10.000 CAL	BV
Heptachlor	3.579	3.573	898386	87869.0	10.000 CAL	VS
Aldrin	3.863	3.856	990106	103752.3	10.000 CAL	SS
Heptachlor Epoxide	4.449	4.443	996400	97064.9	10.000 CAL	SB
gamma-Chlordane	4.680	4.675	1034350	102558.3	10.000 CAL	BB
alpha-Chlordane	4.877	4.872	1037983	101533.5	10.000 CAL	SV
Endosulfan I	4.968	4.963	1072569	105819.2	10.000 CAL	VB
DDE	5.109	5.107	1903702	95539.7	20.000 CAL	BS
Dieldrin	5.395	5.388	1999954	99969.4	20.000 CAL	BS
Endrin	5.951	5.945	2024727	99144.3	20.000 CAL	BB
DDD	6.192	6.191	1292667	66411.8	20.000 CAL	SB
Endosulfan II	6.401	6.396	2092917	103675.6	20.000 CAL	BS
DDT	6.953	6.949	1492824	74582.2	20.000 CAL	BS
Endrin Aldehyde	7.255	7.249	2007117	96524.7	20.000 CAL	BB
Endosulfan Sulfate	8.097	8.093	2325127	111570.2	20.000 CAL	BS
Methoxychlor	9.365	9.364	4700080	45652.3	100.000 CAL	BV
Endrin Ketone	9.825	9.823	2540386	123295.7	20.000 CAL	SB
DCB	12.132	12.133	1586879	145864.8	10.000 CAL	IB

hw 01-29-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2005 (20/40/200ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20021.dat
User: ESanto
Acquired: 01/20/16 22:21:23
Printed: 01/21/16 15:44:22



Channel A Signal (ECD) Results

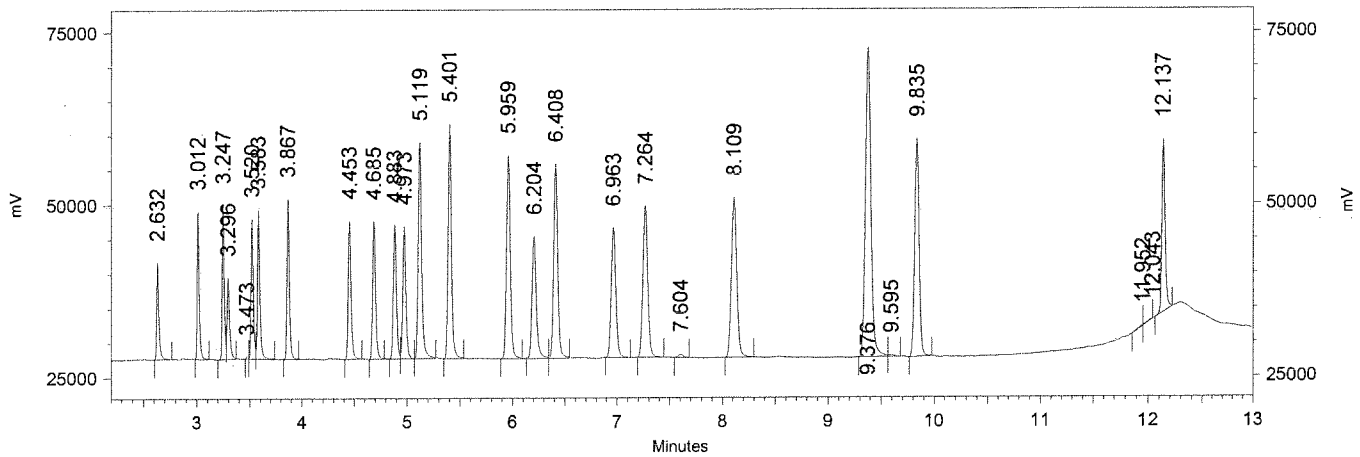
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.377	4510473	210406.3	20.000 CAL	BB
alpha-BHC	2.695	2.697	7084678	332088.1	20.000 CAL	VS
gamma-BHC	2.879	2.883	6863196	327031.5	20.000 CAL	BV
beta-BHC	2.927	2.931	3997031	191799.2	20.000 CAL	VV
delta-BHC	3.035	3.040	7573925	355796.5	20.000 CAL	VS
Heptachlor	3.163	3.167	7042137	340376.6	20.000 CAL	VV
Aldrin	3.363	3.367	7303893	354684.2	20.000 CAL	BB
Heptachlor Epoxide	3.821	3.828	7534286	359106.5	20.000 CAL	SV
gamma-Chlordane	3.929	3.935	8155367	392256.3	20.000 CAL	VV
alpha-Chlordane	4.049	4.057	8042827	394418.4	20.000 CAL	VV
DDE	4.119	4.129	14263219	343789.3	40.000 CAL	VV
Endosulfan I	4.185	4.192	8621280	419333.4	20.000 CAL	VV
Dieldrin	4.436	4.445	14652967	357645.0	40.000 CAL	VV
Endrin	4.711	4.720	14020505	343628.3	40.000 CAL	SV
DDD	4.801	4.815	11345848	268752.2	40.000 CAL	VS
Endosulfan II	5.004	5.015	14844247	367000.6	40.000 CAL	VS
DDT	5.199	5.212	12787447	312997.5	40.000 CAL	VB
Endrin aldehyde	5.661	5.673	13160314	326603.1	40.000 CAL	SS
Methoxychlor	6.103	6.121	29244040	164669.2	200.000 CAL	SV
Endosulfan Sulfate	6.519	6.535	16270582	409015.5	40.000 CAL	BB
Endrin Ketone	7.164	7.181	18069752	446868.0	40.000 CAL	BS
DCB	10.360	10.373	11213865	567820.8	20.000 CAL	BI

pu 01-29-16

722

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2005 (20/40/200ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20021.dat
User: ESanto
Acquired: 01/20/16 22:21:23
Printed: 01/21/16 15:44:22



Channel B Signal
(ECD) Results

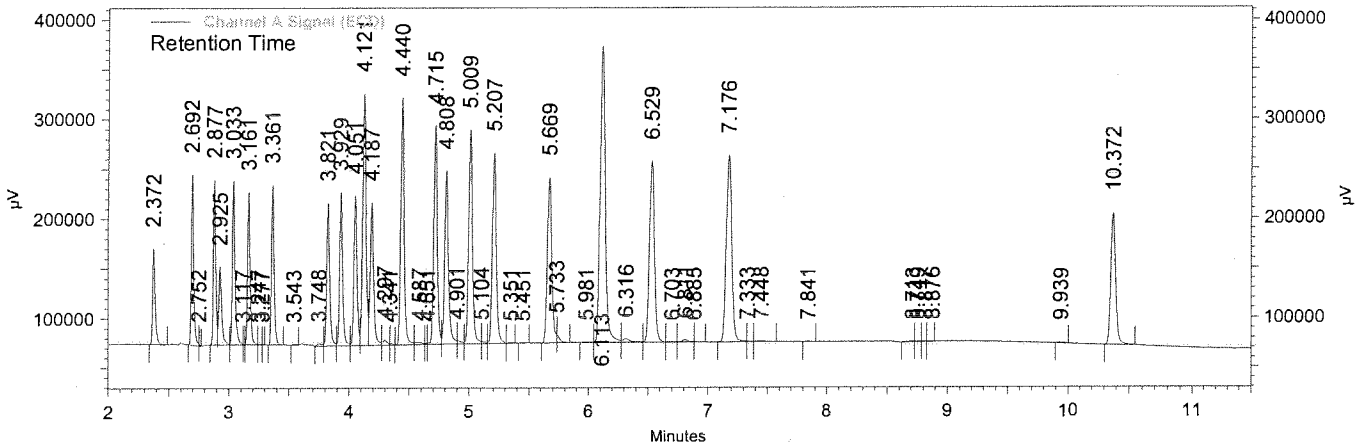
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.632	1097720	53703.4	20.000 CAL	SI
alpha-BHC	3.009	3.012	1544216	72036.4	20.000 CAL	BS
gamma-BHC	3.245	3.247	1644721	79373.3	20.000 CAL	BV
beta-BHC	3.292	3.296	1057230	51602.9	20.000 CAL	VB
delta-BHC	3.516	3.520	1646746	77332.0	20.000 CAL	VV
Heptachlor	3.579	3.583	1899839	87869.0	20.000 CAL	VS
Aldrin	3.863	3.867	2013046	103752.3	20.000 CAL	SS
Heptachlor Epoxide	4.449	4.453	2005140	97064.9	20.000 CAL	BB
gamma-Chlordane	4.680	4.685	2111755	102558.3	20.000 CAL	BV
alpha-Chlordane	4.877	4.883	2101519	101533.5	20.000 CAL	VV
Endosulfan I	4.968	4.973	2145175	105819.2	20.000 CAL	VV
DDE	5.109	5.119	3947206	95539.7	40.000 CAL	VS
Dieldrin	5.395	5.401	4108899	99969.4	40.000 CAL	BS
Endrin	5.951	5.959	4050878	99144.3	40.000 CAL	SV
DDD	6.192	6.204	2727634	66411.8	40.000 CAL	SV
Endosulfan II	6.401	6.408	4251846	103675.6	40.000 CAL	VS
DDT	6.953	6.963	3098043	74582.2	40.000 CAL	SB
Endrin Aldehyde	7.255	7.264	3858754	96524.7	40.000 CAL	BB
Endosulfan Sulfate	8.097	8.109	4554905	111570.2	40.000 CAL	BB
Methoxychlor	9.365	9.376	8912602	45652.3	200.000 CAL	BV
Endrin Ketone	9.825	9.835	4987065	123295.7	40.000 CAL	SB
DCB	12.132	12.137	2801290	145864.8	20.000 CAL	IB

pu 01-29-16

T23

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2006 (40/80/400ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20022.dat
User: ESanto
Acquired: 01/20/16 22:41:41
Printed: 01/21/16 15:44:41



Channel A Signal (ECD) Results

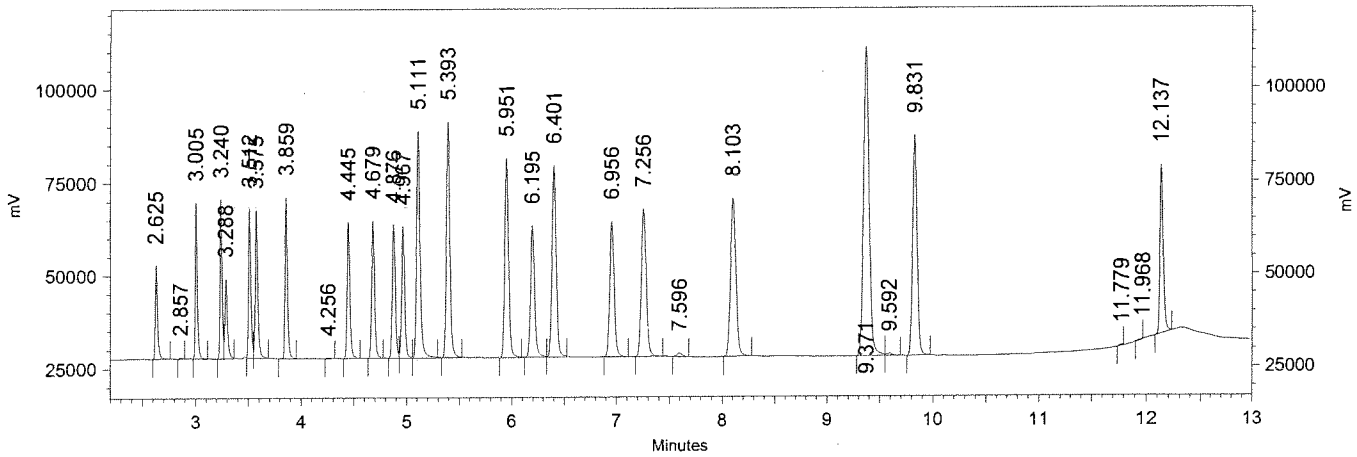
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.372	7713414	210406.3	40.000 CAL	BB
alpha-BHC	2.695	2.692	13031248	332088.1	40.000 CAL	BS
gamma-BHC	2.879	2.877	12369905	327031.5	40.000 CAL	BV
beta-BHC	2.927	2.925	7113290	191799.2	40.000 CAL	VV
delta-BHC	3.035	3.033	13957405	355796.5	40.000 CAL	VS
Heptachlor	3.163	3.161	12573875	340376.6	40.000 CAL	VS
Aldrin	3.363	3.361	13177561	354684.2	40.000 CAL	BS
Heptachlor Epoxide	3.821	3.821	13396695	359106.5	40.000 CAL	VV
gamma-Chlordane	3.929	3.929	14787543	392256.3	40.000 CAL	VV
alpha-Chlordane	4.049	4.051	14479523	394418.4	40.000 CAL	VV
DDE	4.119	4.121	26086483	343789.3	80.000 CAL	VV
Endosulfan I	4.185	4.187	15290855	419333.4	40.000 CAL	VV
Dieldrin	4.436	4.440	26123321	357645.0	80.000 CAL	BV
Endrin	4.711	4.715	24634438	343628.3	80.000 CAL	SV
DDD	4.801	4.808	21118926	268752.2	80.000 CAL	VS
Endosulfan II	5.004	5.009	26139775	367000.6	80.000 CAL	VS
DDT	5.199	5.207	23612023	312997.5	80.000 CAL	VB
Endrin aldehyde	5.661	5.669	22911056	326603.1	80.000 CAL	SS
Methoxychlor	6.103	6.113	49790983	164669.2	400.000 CAL	SV
Endosulfan Sulfate	6.519	6.529	28681342	409015.5	80.000 CAL	VV
Endrin Ketone	7.164	7.176	32349711	446868.0	80.000 CAL	BS
DCB	10.360	10.372	19910839	567820.8	40.000 CAL	BI

SR 01-29-16

T24

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2006 (40/80/400ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20022.dat
User: ESanto
Acquired: 01/20/16 22:41:41
Printed: 01/21/16 15:44:41



Channel B Signal (ECD) Results

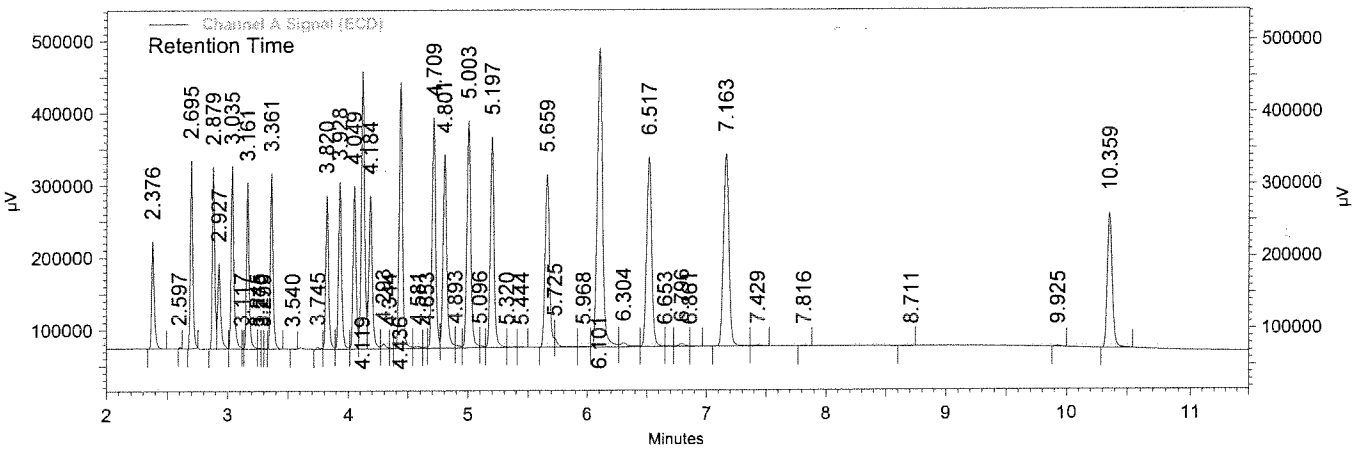
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.625	1991659	53703.4	40.000 CAL	SB
alpha-BHC	3.009	3.005	3050970	72036.4	40.000 CAL	IS
gamma-BHC	3.245	3.240	3167972	79373.3	40.000 CAL	SV
beta-BHC	3.292	3.288	1928326	51602.9	40.000 CAL	VB
delta-BHC	3.516	3.512	3229967	77332.0	40.000 CAL	BV
Heptachlor	3.579	3.575	3461499	87869.0	40.000 CAL	VS
Aldrin	3.863	3.859	3791299	103752.3	40.000 CAL	BS
Heptachlor Epoxide	4.449	4.445	3692998	97064.9	40.000 CAL	BS
gamma-Chlordane	4.680	4.679	3920337	102558.3	40.000 CAL	BV
alpha-Chlordane	4.877	4.876	3926947	101533.5	40.000 CAL	VV
Endosulfan I	4.968	4.967	3986380	105819.2	40.000 CAL	VV
DDE	5.109	5.111	7599118	95539.7	80.000 CAL	VS
Dieldrin	5.395	5.393	7734610	99969.4	80.000 CAL	VS
Endrin	5.951	5.951	7424326	99144.3	80.000 CAL	SV
DDD	6.192	6.195	5318219	66411.8	80.000 CAL	SV
Endosulfan II	6.401	6.401	7805189	103675.6	80.000 CAL	VS
DDT	6.953	6.956	6000723	74582.2	80.000 CAL	SS
Endrin Aldehyde	7.255	7.256	7000123	96524.7	80.000 CAL	BB
Endosulfan Sulfate	8.097	8.103	8324408	111570.2	80.000 CAL	BS
Methoxychlor	9.365	9.371	16486123	45652.3	400.000 CAL	BV
Endrin Ketone	9.825	9.831	9313799	123295.7	80.000 CAL	BB
DCB	12.132	12.137	5137497	145864.8	40.000 CAL	IB

TM 01-29-16

T25

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2007 (60/120/600ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20023.dat
User: ESanto
Acquired: 01/20/16 23:01:59
Printed: 01/21/16 15:45:00



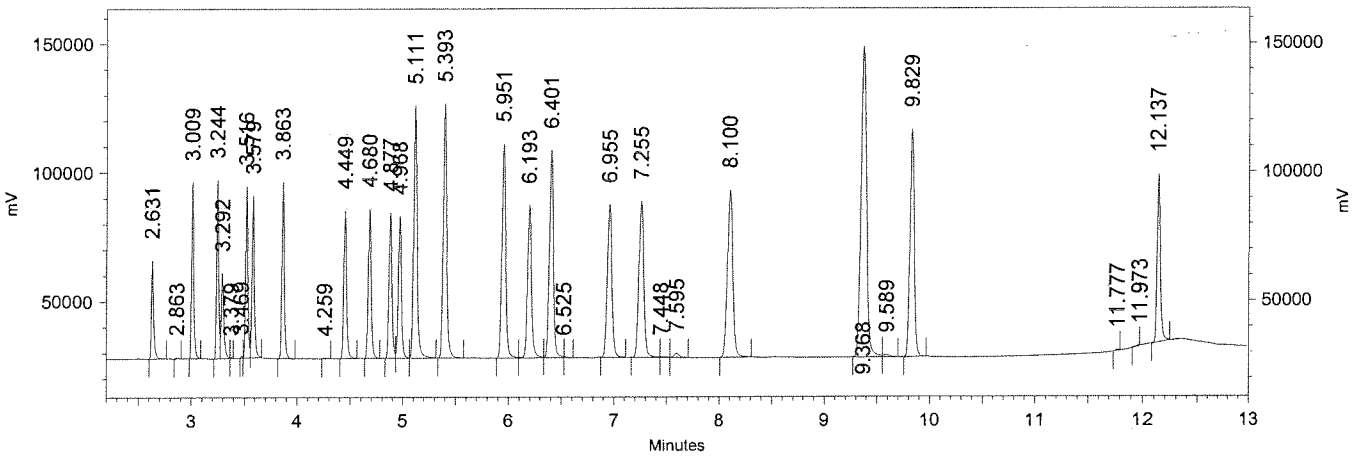
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.376	12076272	210406.3	60.000 CAL	BB
alpha-BHC	2.695	2.695	19634481	332088.1	60.000 CAL	BI
gamma-BHC	2.879	2.879	19124719	327031.5	60.000 CAL	BV
beta-BHC	2.927	2.927	10711458	191799.2	60.000 CAL	VV
delta-BHC	3.035	3.035	21619797	355796.5	60.000 CAL	VS
Heptachlor	3.163	3.161	19266990	340376.6	60.000 CAL	VS
Aldrin	3.363	3.361	20261390	354684.2	60.000 CAL	VS
Heptachlor Epoxide	3.821	3.820	19669190	359106.5	60.000 CAL	VV
gamma-Chlordane	3.929	3.928	21999071	392256.3	60.000 CAL	VV
alpha-Chlordane	4.049	4.049	21514254	394418.4	60.000 CAL	VV
DDE	4.119	4.119	39335748	343789.3	120.000 CAL	VV
Endosulfan I	4.185	4.184	22335156	419333.4	60.000 CAL	VV
Dieldrin	4.436	4.436	38444019	357645.0	120.000 CAL	VV
Endrin	4.711	4.709	35872535	343628.3	120.000 CAL	SV
DDD	4.801	4.801	32004845	268752.2	120.000 CAL	VS
Endosulfan II	5.004	5.003	38250446	367000.6	120.000 CAL	VS
DDT	5.199	5.197	35947724	312997.5	120.000 CAL	VS
Endrin aldehyde	5.661	5.659	33632664	326603.1	120.000 CAL	SS
Methoxychlor	6.103	6.101	69115031	164669.2	0.000 CAL	VV
Endosulfan Sulfate	6.519	6.517	42333328	409015.5	120.000 CAL	VS
Endrin Ketone	7.164	7.163	47435500	446868.0	120.000 CAL	BV
DCB	10.360	10.359	28603322	567820.8	60.000 CAL	BI

01-21-16

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2007 (60/120/600ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20023.dat
User: ESanto
Acquired: 01/20/16 23:01:59
Printed: 01/21/16 15:45:00



Channel B Signal
(ECD) Results

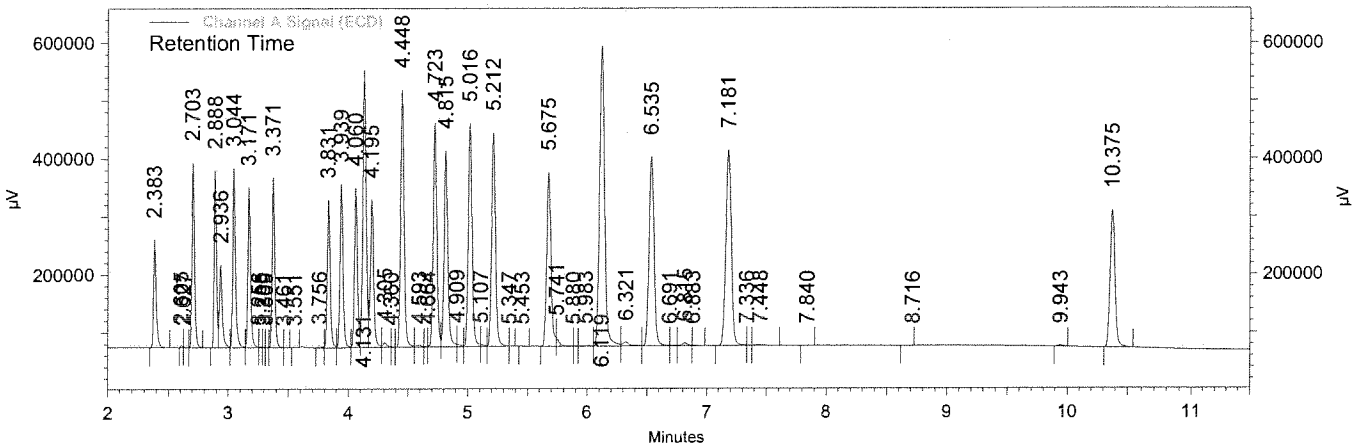
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.631	3057499	53703.4	60.000 CAL	SI
alpha-BHC	3.009	3.009	5001795	72036.4	60.000 CAL	BI
gamma-BHC	3.245	3.244	5164311	79373.3	60.000 CAL	SV
beta-BHC	3.292	3.292	2984270	51602.9	60.000 CAL	VV
delta-BHC	3.516	3.516	5371887	77332.0	60.000 CAL	VV
Heptachlor	3.579	3.579	5392004	87869.0	60.000 CAL	VI
Aldrin	3.863	3.863	6043601	103752.3	60.000 CAL	SS
Heptachlor Epoxide	4.449	4.449	5780252	97064.9	60.000 CAL	BS
gamma-Chlordane	4.680	4.680	6169034	102558.3	60.000 CAL	BV
alpha-Chlordane	4.877	4.877	6193197	101533.5	60.000 CAL	VV
Endosulfan I	4.968	4.968	6207701	105819.2	60.000 CAL	VV
DDE	5.109	5.111	12016380	95539.7	120.000 CAL	VS
Dieldrin	5.395	5.393	12145998	99969.4	120.000 CAL	VB
Endrin	5.951	5.951	11471436	99144.3	120.000 CAL	SV
DDD	6.192	6.193	8670000	66411.8	120.000 CAL	VV
Endosulfan II	6.401	6.401	12047582	103675.6	120.000 CAL	VS
DDT	6.953	6.955	9628557	74582.2	120.000 CAL	SS
Endrin Aldehyde	7.255	7.255	10757426	96524.7	120.000 CAL	SV
Endosulfan Sulfate	8.097	8.100	12768632	111570.2	120.000 CAL	BS
Methoxychlor	9.365	9.368	24342896	45652.3	0.000 CAL	SV
Endrin Ketone	9.825	9.829	14162410	123295.7	120.000 CAL	BB
DCB	12.132	12.137	7461244	145864.8	60.000 CAL	SI

PM 01-29-16

TZT

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2008 (80/160/800ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20024.dat
User: ESanto
Acquired: 01/20/16 23:22:22
Printed: 01/21/16 15:45:17



Channel A Signal (ECD) Results

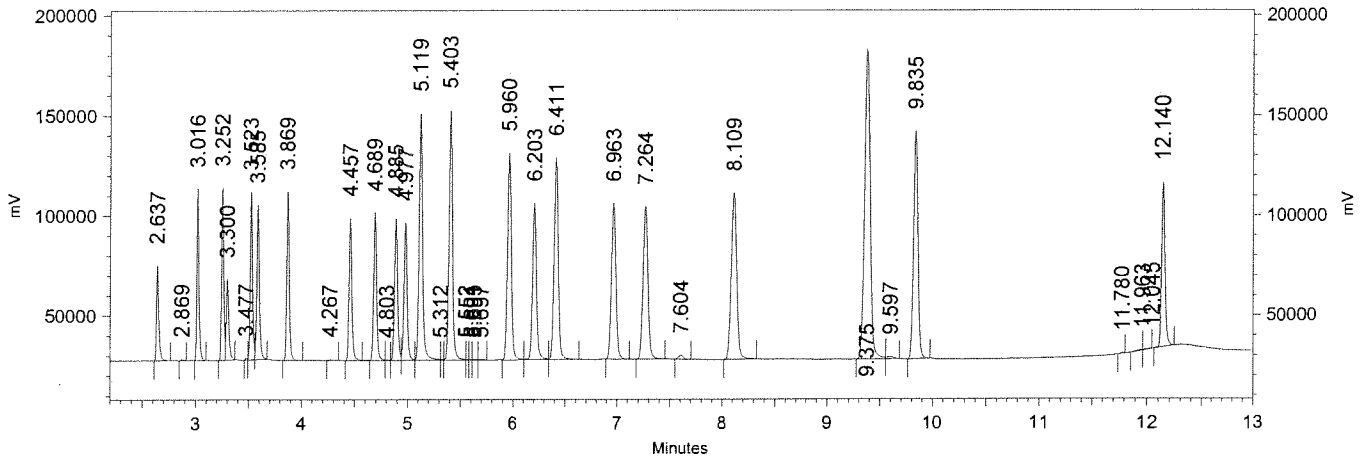
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.383	15235946	210406.3	80.000 CAL	BB
alpha-BHC	2.695	2.703	24648503	332088.1	80.000 CAL	BI
gamma-BHC	2.879	2.888	23273762	327031.5	80.000 CAL	BV
beta-BHC	2.927	2.936	12985318	191799.2	80.000 CAL	VV
delta-BHC	3.035	3.044	26535187	355796.5	80.000 CAL	VV
Heptachlor	3.163	3.171	23331232	340376.6	80.000 CAL	VS
Aldrin	3.363	3.371	24575998	354684.2	80.000 CAL	VS
Heptachlor Epoxide	3.821	3.831	23707234	359106.5	80.000 CAL	VV
gamma-Chlordane	3.929	3.939	26875117	392256.3	80.000 CAL	VV
alpha-Chlordane	4.049	4.060	26374150	394418.4	80.000 CAL	VV
DDE	4.119	4.131	49025538	343789.3	160.000 CAL	VV
Endosulfan I	4.185	4.195	27106853	419333.4	80.000 CAL	VV
Dieldrin	4.436	4.448	47015932	357645.0	160.000 CAL	VV
Endrin	4.711	4.723	43876090	343628.3	160.000 CAL	SV
DDD	4.801	4.815	40449324	268752.2	160.000 CAL	VS
Endosulfan II	5.004	5.016	47019627	367000.6	160.000 CAL	VS
DDT	5.199	5.212	45605622	312997.5	160.000 CAL	VS
Endrin aldehyde	5.661	5.675	41753534	326603.1	160.000 CAL	SS
Methoxychlor	6.103	6.119	84923271	164669.2	0.000 CAL	VV
Endosulfan Sulfate	6.519	6.535	52812556	409015.5	160.000 CAL	VS
Endrin Ketone	7.164	7.181	59086136	446868.0	160.000 CAL	BS
DCB	10.360	10.375	36194502	567820.8	80.000 CAL	BI

01-29-16

T28

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CPF9A2008 (80/160/800ppb PEST ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20024.dat
User: ESanto
Acquired: 01/20/16 23:22:22
Printed: 01/21/16 15:45:17



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.637	3797220	53703.4	80.000 CAL	SI
alpha-BHC	3.009	3.016	6351878	72036.4	80.000 CAL	BI
gamma-BHC	3.245	3.252	6471149	79373.3	80.000 CAL	SV
beta-BHC	3.292	3.300	3604906	51602.9	80.000 CAL	VB
delta-BHC	3.516	3.523	6834673	77332.0	80.000 CAL	VV
Heptachlor	3.579	3.585	6675299	87869.0	80.000 CAL	VI
Aldrin	3.863	3.869	7465138	103752.3	80.000 CAL	SB
Heptachlor Epoxide	4.449	4.457	7261817	97064.9	80.000 CAL	BS
gamma-Chlordane	4.680	4.689	7836891	102558.3	80.000 CAL	VV
alpha-Chlordane	4.877	4.885	7834829	101533.5	80.000 CAL	VV
Endosulfan I	4.968	4.977	7831301	105819.2	80.000 CAL	VV
DDE	5.109	5.119	15436246	95539.7	160.000 CAL	VS
Dieldrin	5.395	5.403	15487128	99969.4	160.000 CAL	VS
Endrin	5.951	5.960	14441980	99144.3	160.000 CAL	BV
DDD	6.192	6.203	11419575	66411.8	160.000 CAL	VV
Endosulfan II	6.401	6.411	15365218	103675.6	160.000 CAL	VB
DDT	6.953	6.963	12637225	74582.2	160.000 CAL	BS
Endrin Aldehyde	7.255	7.264	13578518	96524.7	160.000 CAL	SB
Endosulfan Sulfate	8.097	8.109	16314422	111570.2	160.000 CAL	BS
Methoxychlor	9.365	9.375	31009613	45652.3	0.000 CAL	SV
Endrin Ketone	9.825	9.835	18219336	123295.7	160.000 CAL	BB
DCB	12.132	12.140	9496485	145864.8	80.000 CAL	II

01-29-16

INITIAL CALIBRATION
METHOD EPA 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
LFID & Datetime: RA20035A 01/21/16 03:07
LFID & Datetime: RA20036A 01/21/16 03:27
LFID & Datetime: RA20037A 01/21/16 03:47
LFID & Datetime: RA20038A 01/21/16 04:07
LFID & Datetime: RA20039A 01/21/16 04:28
LFID & Datetime: RA20040A 01/21/16 04:48
LFID & Datetime: RA20041A 01/21/16 05:08
LFID & Datetime: RA20042A 01/21/16 05:28
CONC UNIT : ppb
Method Name : TOF9A20.met

COMPOUND	CONC X	CALIBRATION FACTORS (AREA or HEIGHT)/UNIT 1.00X	2.00X	5.00X	10.00X	15.00X	20.00X	30.00X	40.00X	MEAN	%RSD
Toxaphene	50.00	373097	370240	343257	334359	320937	323717	311931	302772	335038.6	7.7

TM 01-29-16

736

INITIAL CALIBRATION
METHOD EPA 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
LFID & Datetime: RA20035B 01/21/16 03:07
LFID & Datetime: RA20036B 01/21/16 03:27
LFID & Datetime: RA20037B 01/21/16 03:47
LFID & Datetime: RA20038B 01/21/16 04:07
LFID & Datetime: RA20039B 01/21/16 04:28
LFID & Datetime: RA20040B 01/21/16 04:48
LFID & Datetime: RA20041B 01/21/16 05:08
LFID & Datetime: RA20042B 01/21/16 05:28
CONC UNIT : ppb
Method Name : TOF9A20.met

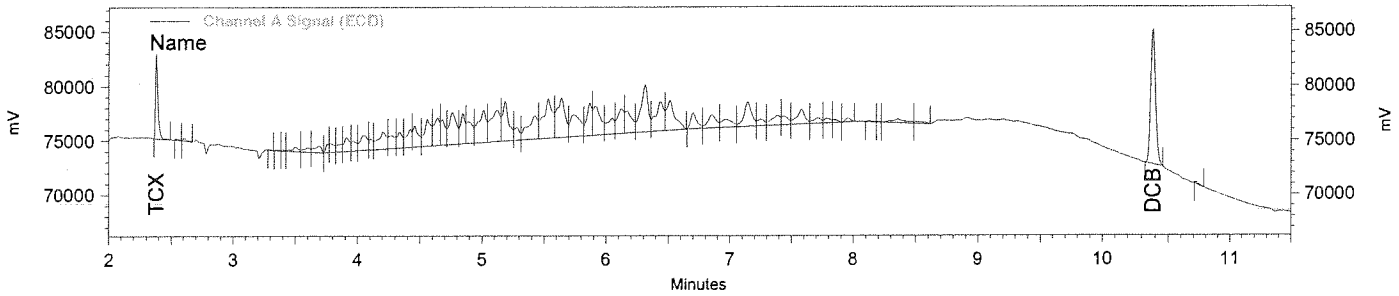
COMPOUND	CONC X	CALIBRATION FACTORS (AREA or HEIGHT)/UNIT 1.00X	2.00X	5.00X	10.00X	15.00X	20.00X	30.00X	40.00X	MEAN	%RSD
Toxaphene	50.00	72395	67613	63706	63007	61016	63577	63375	62363	64631.4	5.7

JM 01-29-16

T31

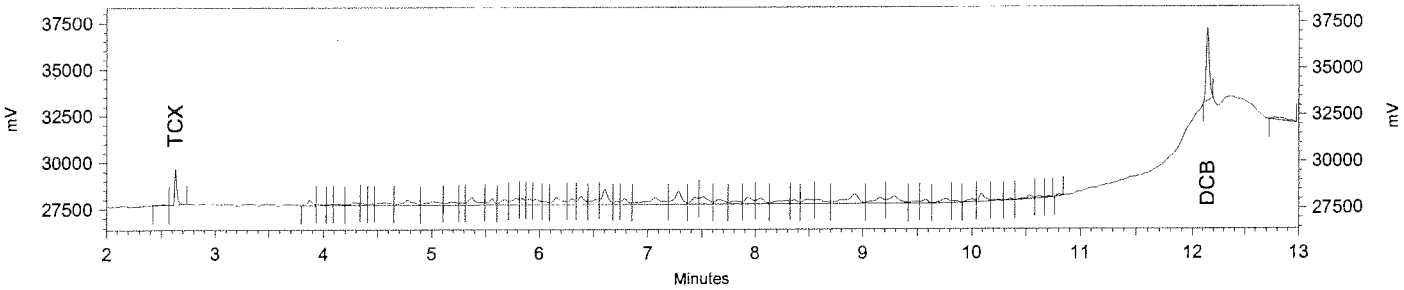
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2001 (50/2.5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20035.dat
User: ESanto
Acquired: 01/21/16 03:07:11
Printed: 01/25/16 18:22:43



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.379	582752	223052.9	2.50 CAL	BI
DCB	10.381	10.381	1689370	576095.1	2.50 CAL	BI
Toxaphene			18654862	335038.6	50.00 CAL	



Channel B Signal (ECD) Results

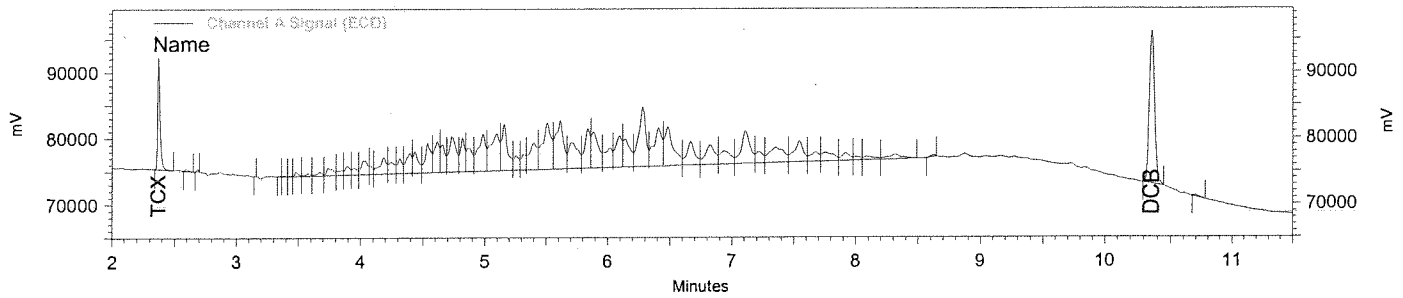
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.632	150301	53825.0	2.50 CAL	BI
DCB	12.143	12.143	437446	146761.8	2.50 CAL	II
Toxaphene			3619745	64631.4	50.00 CAL	

ka 01-29-16

732

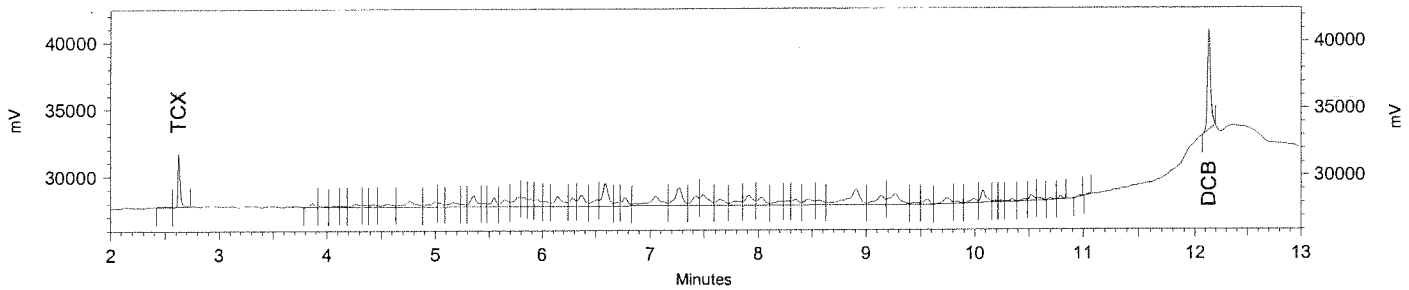
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2002 (100/5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20036.dat
User: ESanto
Acquired: 01/21/16 03:27:28
Printed: 01/25/16 18:23:21



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.369	1293049	223052.9	5.00 CAL	BI
DCB	10.381	10.355	3374930	576095.1	5.00 CAL	BI
Toxaphene			37024015	335038.6	100.00 CAL	



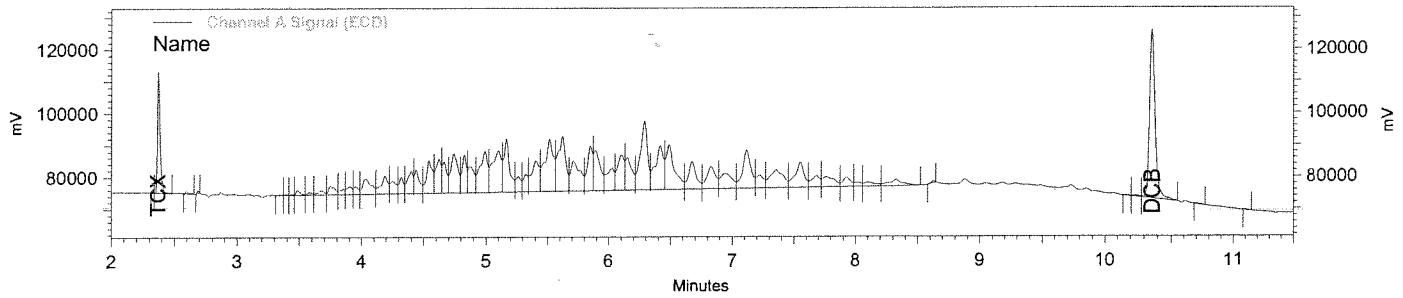
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.623	304923	53825.0	5.00 CAL	BI
DCB	12.143	12.131	861039	146761.8	5.00 CAL	II
Toxaphene			6761251	64631.4	100.00 CAL	

tm 01-29-16

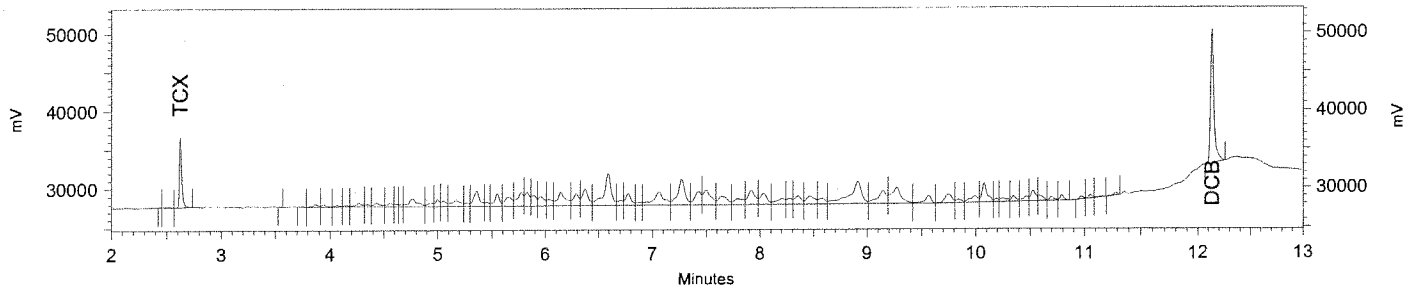
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2003 (250/12.5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20037.dat
User: ESanto
Acquired: 01/21/16 03:47:41
Printed: 01/25/16 18:23:39



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.369	2938058	223052.9	12.50 CAL	VI
DCB	10.381	10.359	8064630	576095.1	12.50 CAL	VI
Toxaphene			85814156	335038.6	250.00 CAL	



Channel B Signal (ECD) Results

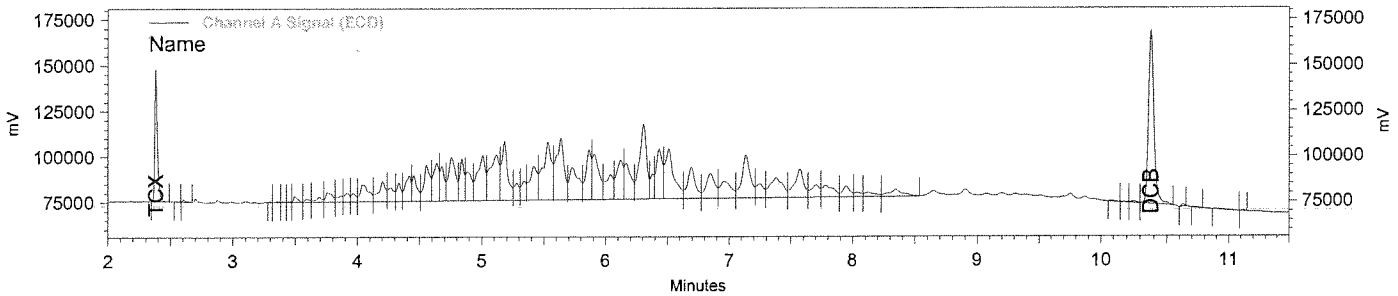
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.624	693864	53825.0	12.50 CAL	BI
DCB	12.143	12.135	2121599	146761.8	12.50 CAL	IB
Toxaphene			15926621	64631.4	250.00 CAL	

RL 01-29-16

TSH

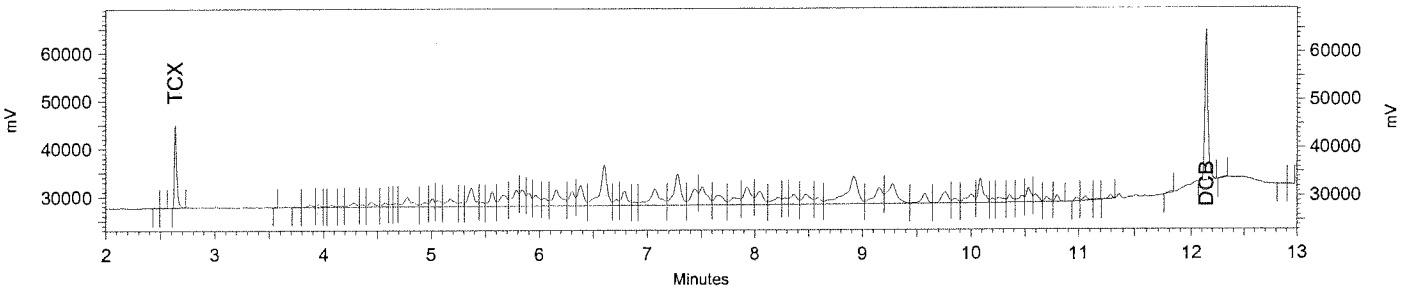
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2004 (500/25ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20038.dat
User: ESanto
Acquired: 01/21/16 04:07:57
Printed: 01/25/16 18:23:57



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.380	5783921	223052.9	25.00 CAL	BI
DCB	10.381	10.376	14648609	576095.1	25.00 CAL	VI
Toxaphene			167179248	335038.6	500.00 CAL	



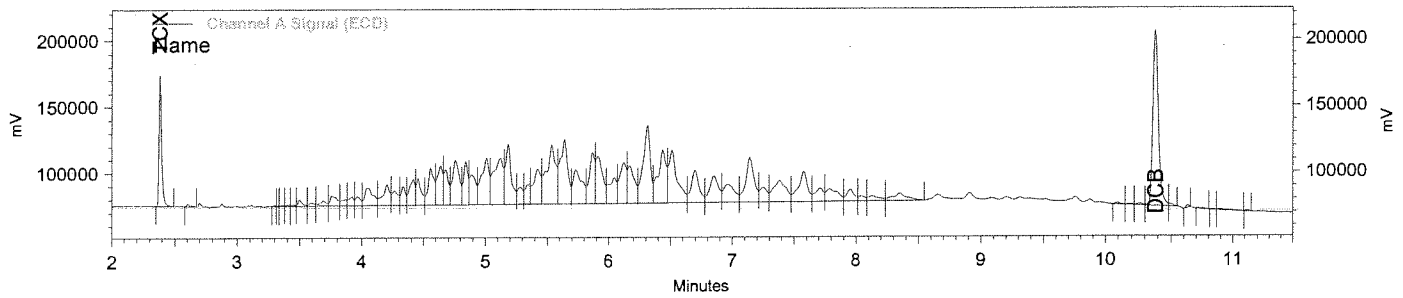
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.635	1337044	53825.0	25.00 CAL	BI
DCB	12.143	12.140	3634687	146761.8	25.00 CAL	IB
Toxaphene			31503573	64631.4	500.00 CAL	

01-29-16

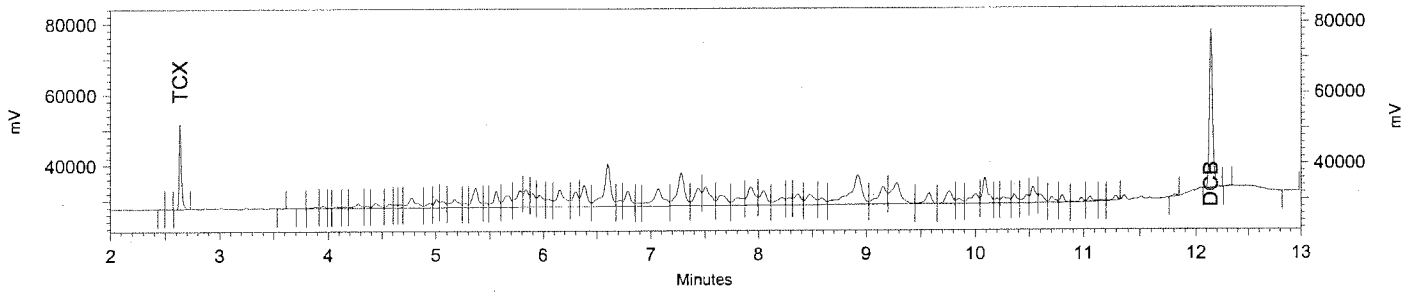
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2005 (750/37.5ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20039.dat
User: ESanto
Acquired: 01/21/16 04:28:14
Printed: 01/25/16 18:24:15



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.380	7917819	223052.9	37.50 CAL	BI
DCB	10.381	10.381	20432642	576095.1	37.50 CAL	VV
Toxaphene			240702491	335038.6	750.00 CAL	



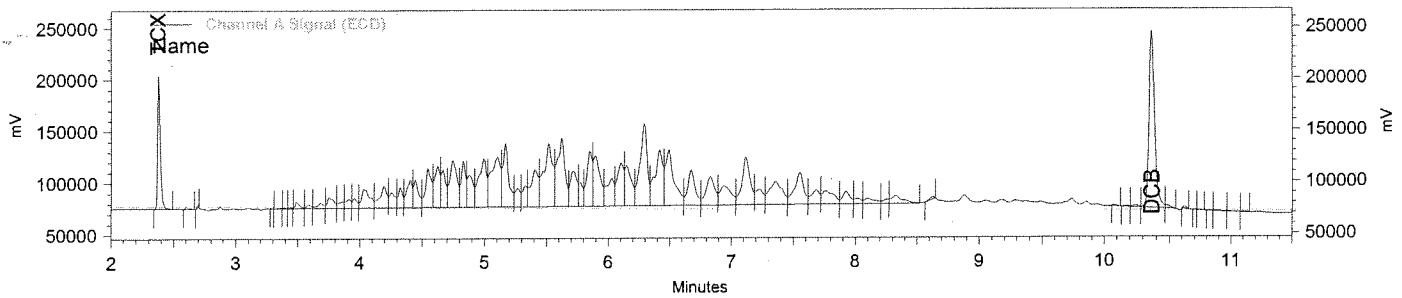
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.633	1878129	53825.0	37.50 CAL	BI
DCB	12.143	12.140	5126243	146761.8	37.50 CAL	IB
Toxaphene			45761973	64631.4	750.00 CAL	

m 01-29-16

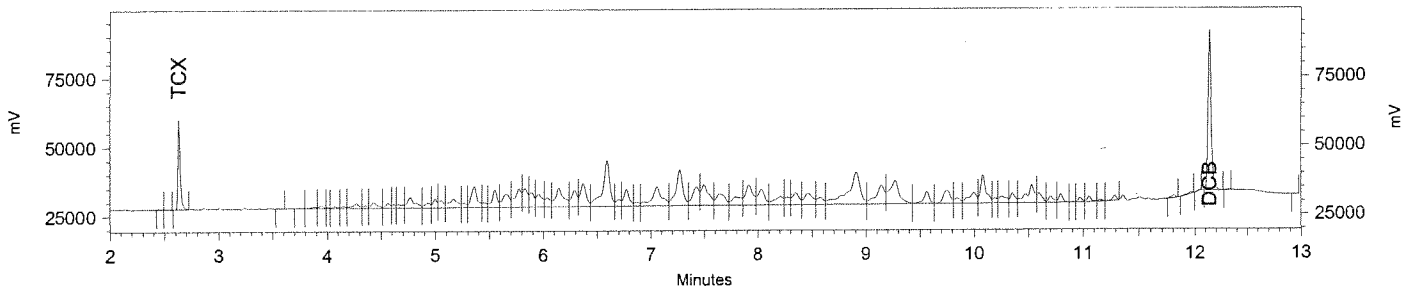
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2006 (1000/50ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20040.dat
User: ESanto
Acquired: 01/21/16 04:48:30
Printed: 01/25/16 18:24:31



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.375	10496067	223052.9	50.00 CAL	BI
DCB	10.381	10.363	26557590	576095.1	50.00 CAL	VV
Toxaphene			323717024	335038.6	1000.00 CAL	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.629	2557972	53825.0	50.00 CAL	BI
DCB	12.143	12.137	6706239	146761.8	50.00 CAL	BB
Toxaphene			63577214	64631.4	1000.00 CAL	

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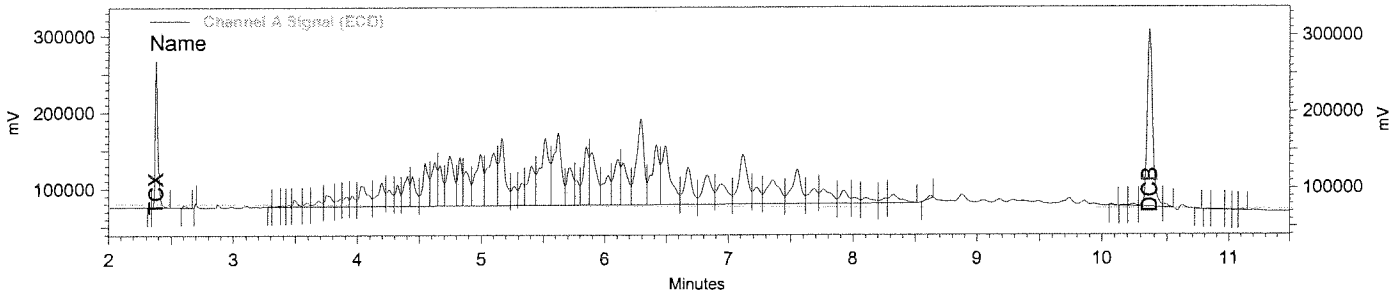
737

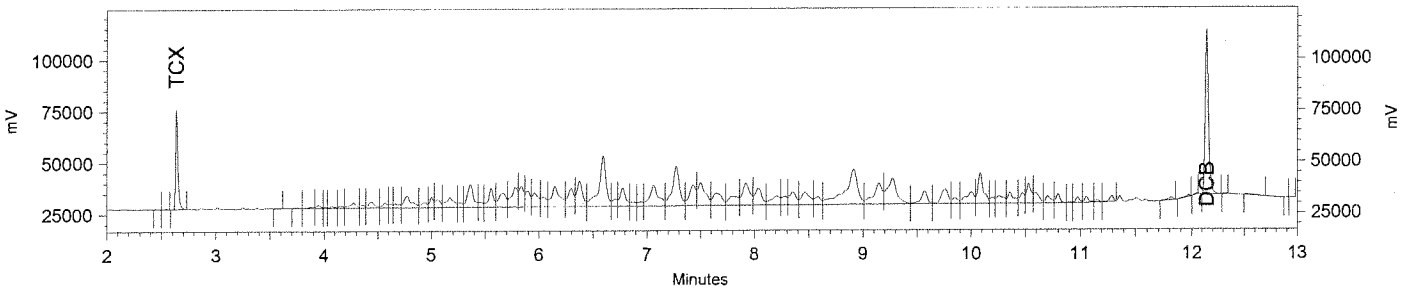
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2007 (1500/75ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20041.dat
User: ESanto
Acquired: 01/21/16 05:08:47
Printed: 01/25/16 18:24:48



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.379	15830708	223052.9	75.00 CAL	BI
DCB	10.381	10.364	36539580	576095.1	75.00 CAL	VV
Toxaphene			467896386	335038.6	1500.00 CAL	



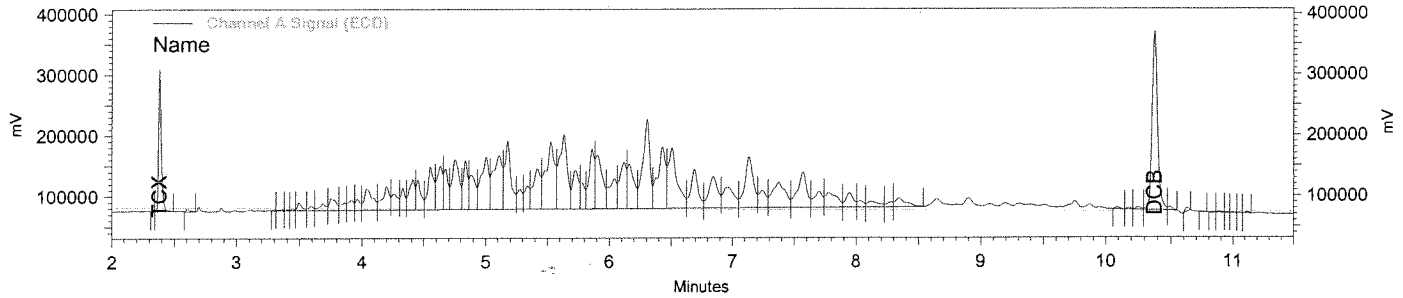
Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.633	3852169	53825.0	75.00 CAL	BI
DCB	12.143	12.140	9239618	146761.8	75.00 CAL	BB
Toxaphene			95062185	64631.4	1500.00 CAL	

TM 01-29-16

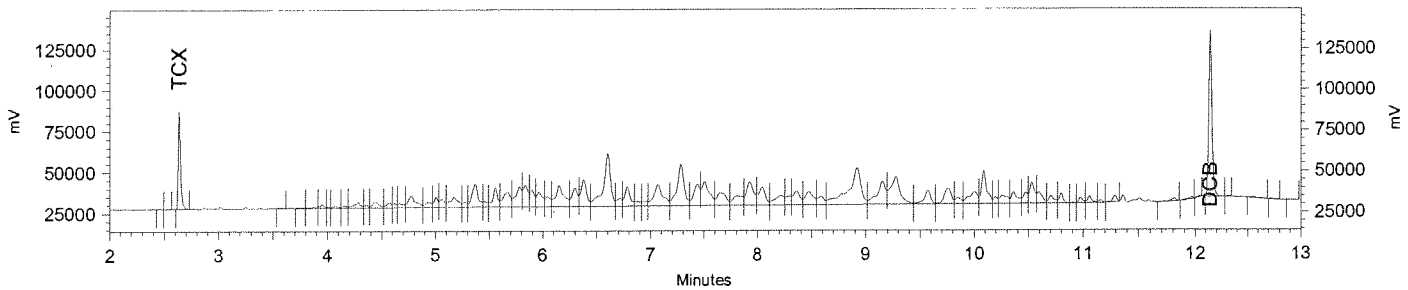
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: TOF9A2008 (2000/100ppb TOXA ICAL)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20042.dat
User: ESanto
Acquired: 01/21/16 05:28:59
Printed: 01/25/16 18:25:04



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.379	19417153	223052.9	100.00 CAL	BI
DCB	10.381	10.375	46369565	576095.1	100.00 CAL	VV
Toxaphene			605543871	335038.6	2000.00 CAL	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.633	4789867	53825.0	100.00 CAL	BI
DCB	12.143	12.137	11777353	146761.8	100.00 CAL	BB
Toxaphene			124725141	64631.4	2000.00 CAL	

01-29-16

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20021A 01/20/2016 22:21
Mid Conc Init LFID & Datetime: RA20029A 01/21/2016 01:04
Conc Cont LFID & Datetime: RA20033A 01/21/2016 02:26
Conc Cont LFID & Datetime: RA20034A 01/21/2016 02:46
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	2.691	2.671	2.711	20.0	332088.0	7258078	21.86	9		20
gamma-BHC	2.876	2.854	2.898	20.0	327031.5	6812417	20.83	4		20
beta-BHC	2.925	2.903	2.947	20.0	191799.2	4062227	21.18	6		20
delta-BHC	3.033	3.012	3.054	20.0	355796.5	7533059	21.17	6		20
Heptachlor	3.160	3.136	3.184	20.0	340376.6	6928687	20.36	2		20
Aldrin	3.360	3.334	3.386	20.0	354684.2	7363811	20.76	4		20
Heptachlor Epoxide	3.820	3.790	3.850	20.0	359106.5	7371310	20.53	3		20
gamma-Chlordane	3.928	3.896	3.960	20.0	392256.3	8095638	20.64	3		20
alpha-Chlordane	4.049	4.017	4.081	20.0	394418.4	8136729	20.63	3		20
DDE	4.121	4.089	4.153	20.0	343789.3	7359837	21.41	7		20
Endosulfan I	4.185	4.150	4.220	20.0	419333.4	8381780	19.99	-0		20
Dieldrin	4.437	4.405	4.469	20.0	357644.9	7857519	21.97	10		20
Endrin	4.711	4.681	4.741	20.0	343628.3	7551501	21.98	10		20
DDD	4.807	4.777	4.837	20.0	268752.2	5636015	20.97	5		20
Endosulfan II	5.007	4.978	5.036	20.0	367000.6	8062502	21.97	10		20
DDT	5.203	5.173	5.233	20.0	312997.5	7151008	22.85	14		20
Endrin Aldehyde	5.664	5.632	5.696	20.0	326603.0	7407168	22.68	13		20
Methoxychlor	6.111	6.073	6.149	200.0	164669.2	30021332	225.40	13		20
Endosulfan Sulfate	6.524	6.488	6.560	20.0	409015.5	9068241	22.17	11		20
Endrin Ketone	7.169	7.133	7.205	20.0	446867.9	9681898	21.67	8		20
Oxychlordane	3.747	3.728	3.766	20.0	341147.6	6674858	19.57	-2		20
2,4'-DDE	3.819	3.797	3.841	20.0	267781.1	5209041	19.45	-3		20
trans-Nonachlor	4.044	4.021	4.067	20.0	478254.9	8156155	17.05	-15		20
2,4'-DDD	4.312	4.287	4.337	20.0	231392.7	4411067	19.06	-5		20
2,4'-DDT	4.599	4.576	4.622	20.0	274849.4	5741374	20.89	4		20
cis-Nonachlor	4.767	4.745	4.789	20.0	523874.0	9182146	17.53	-12		20
Mirex	6.272	6.244	6.300	20.0	459085.4	8484384	18.48	-8		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.372	2.352	2.392	20.0	210406.3	4494975	21.36	7		20
DCB	10.361	10.311	10.411	20.0	567820.8	11299030	19.90	-1		20

RL 01-29-16

T41

INITIAL CALIBRATION VERIFICATION
METHOD 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20021B 01/20/2016 22:21
Mid Conc Init LFID & Datetime: RA20029B 01/21/2016 01:04
Conc Cont LFID & Datetime: RA20033B 01/21/2016 02:26
Conc Cont LFID & Datetime: RA20034B 01/21/2016 02:46
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	3.005	2.987	3.023	20.0	72036.4	1547166	21.48	7		20
gamma-BHC	3.241	3.224	3.258	20.0	79373.3	1590255	20.03	0		20
beta-BHC	3.289	3.272	3.306	20.0	51602.9	1055909	20.46	2		20
delta-BHC	3.513	3.496	3.530	20.0	77332.0	1594987	20.63	3		20
Heptachlor	3.576	3.558	3.594	20.0	87869.0	1809655	20.59	3		20
Aldrin	3.860	3.841	3.879	20.0	103752.3	1987659	19.16	-4		20
Heptachlor Epoxide	4.447	4.424	4.470	20.0	97064.9	1977125	20.37	2		20
gamma-Chlordane	4.679	4.658	4.700	20.0	102558.3	2057164	20.06	0		20
alpha-Chlordane	4.876	4.858	4.894	20.0	101533.5	2084417	20.53	3		20
DDE	5.112	5.096	5.128	20.0	95539.7	1933039	20.23	1		20
Endosulfan I	4.967	4.948	4.986	20.0	105819.2	2091571	19.77	-1		20
Dieldrin	5.393	5.376	5.410	20.0	99969.4	2013495	20.14	1		20
Endrin	5.951	5.931	5.971	20.0	99144.3	2051865	20.70	3		20
DDD	6.196	6.177	6.215	20.0	66411.8	1323662	19.93	-0		20
Endosulfan II	6.401	6.379	6.423	20.0	103675.6	2211777	21.33	7		20
DDT	6.956	6.932	6.980	20.0	74582.2	1542471	20.68	3		20
Endrin Aldehyde	7.257	7.235	7.279	20.0	96524.7	2133114	22.10	10		20
Methoxychlor	9.371	9.343	9.399	200.0	45652.3	9072734	213.40	7		20
Endosulfan Sulfate	8.103	8.079	8.127	20.0	111570.2	2386884	21.39	7		20
Endrin Ketone	9.828	9.798	9.858	20.0	123295.7	2541221	20.61	3		20
Oxychlordane	4.349	4.329	4.369	20.0	98949.8	1925353	19.46	-3		20
2,4'-DDE	4.676	4.655	4.697	20.0	72355.1	1381799	19.10	-5		20
trans-Nonachlor	4.808	4.790	4.826	20.0	132451.0	2239467	16.91	-15		20
2,4'-DDD	5.459	5.441	5.477	20.0	59135.7	1129042	19.09	-5		20
2,4'-DDT	6.043	6.024	6.062	20.0	61923.8	1354828	21.88	9		20
cis-Nonachlor	6.128	6.110	6.146	20.0	138591.9	2496924	18.02	-10		20
Mirex	9.645	9.621	9.669	20.0	128349.0	2462911	19.19	-4		20

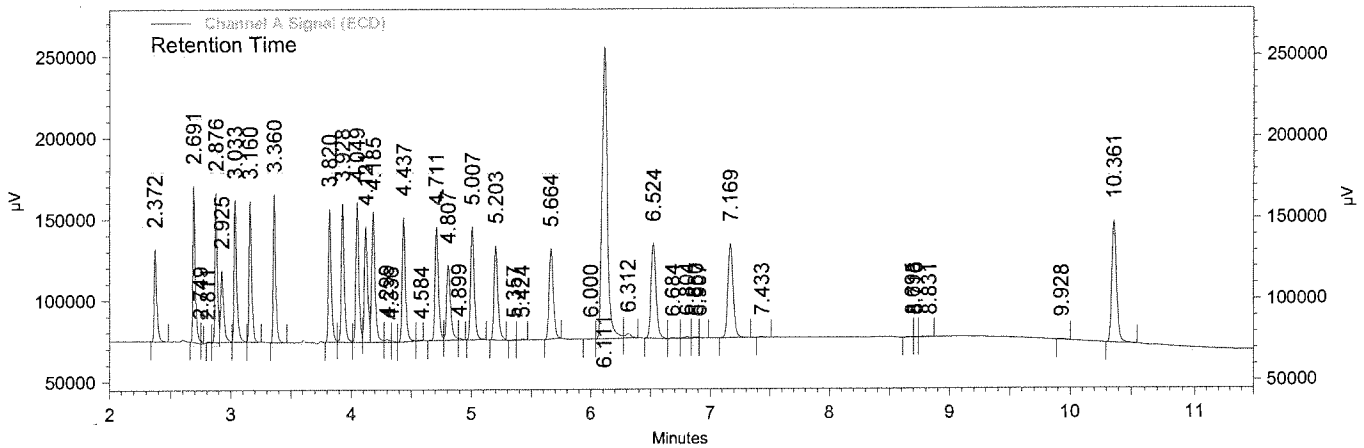
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.627	2.604	2.650	20.0	53703.4	1107522	20.62	3		20
DCB	12.133	12.098	12.168	20.0	145864.8	2981388	20.44	2		20

01-29-16

TH2

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: ICPF9A2001 (20/200ppb PEST ICV)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20033.dat
User: ESanto
Acquired: 01/21/16 02:26:22
Printed: 01/21/16 15:53:28



Channel A Signal (ECD) Results

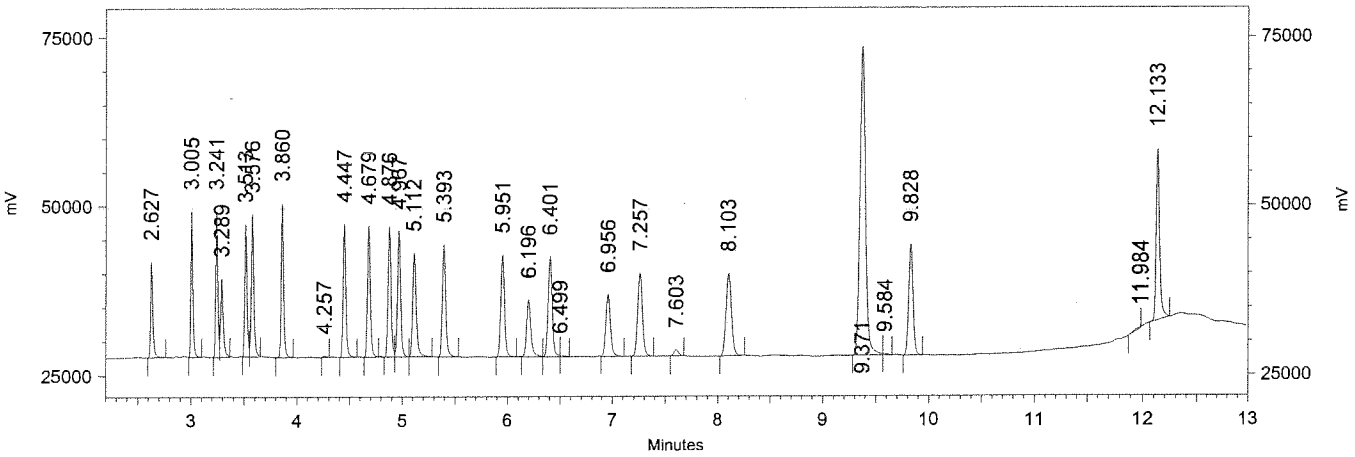
Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.376	2.372	4494975	210406.3	21.363	BB
alpha-BHC	2.695	2.691	7258078	332088.1	21.856	BS
gamma-BHC	2.879	2.876	6812417	327031.5	20.831	VV
beta-BHC	2.927	2.925	4062227	191799.2	21.180	VV
delta-BHC	3.035	3.033	7533059	355796.5	21.172	VV
Heptachlor	3.163	3.160	6928687	340376.6	20.356	VB
Aldrin	3.363	3.360	7363811	354684.2	20.762	BB
Heptachlor Epoxide	3.821	3.820	7371310	359106.5	20.527	BV
gamma-Chlordane	3.929	3.928	8095638	392256.3	20.639	VV
alpha-Chlordane	4.049	4.049	8136729	394418.4	20.630	VV
DDE	4.119	4.121	7359837	343789.3	21.408	VV
Endosulfan I	4.185	4.185	8381780	419333.4	19.988	VV
Dieldrin	4.436	4.437	7857519	357645.0	21.970	BV
Endrin	4.711	4.711	7551501	343628.3	21.976	BV
DDD	4.801	4.807	5636015	268752.2	20.971	VS
Endosulfan II	5.004	5.007	8062502	367000.6	21.969	II
DDT	5.199	5.203	7151008	312997.5	22.847	II
Endrin aldehyde	5.661	5.664	7407168	326603.1	22.679	BI
Methoxychlor	6.103	6.111	30021333	164669.2	225.398	SV
Endosulfan Sulfate	6.519	6.524	9068241	409015.5	22.171	BB
Endrin Ketone	7.164	7.169	9681898	446868.0	21.666	BB
DCB	10.360	10.361	11299030	567820.8	19.899	BI

01-29-16

743

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: ICPF9A2001 (20/200ppb PEST ICV)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20033.dat
User: ESanto
Acquired: 01/21/16 02:26:22
Printed: 01/21/16 15:53:28



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.631	2.627	1107522	53703.4	20.623	SI
alpha-BHC	3.009	3.005	1547166	72036.4	21.478	BB
gamma-BHC	3.245	3.241	1590255	79373.3	20.035	SV
beta-BHC	3.292	3.289	1055909	51602.9	20.462	VB
delta-BHC	3.516	3.513	1594987	77332.0	20.625	BV
Heptachlor	3.579	3.576	1809655	87869.0	20.595	VS
Aldrin	3.863	3.860	1987659	103752.3	19.158	BS
Heptachlor Epoxide	4.449	4.447	1977125	97064.9	20.369	SB
gamma-Chlordane	4.680	4.679	2057164	102558.3	20.058	BV
alpha-Chlordane	4.877	4.876	2084417	101533.5	20.529	VV
Endosulfan I	4.968	4.967	2091571	105819.2	19.766	VV
DDE	5.109	5.112	1933039	95539.7	20.233	VB
Dieldrin	5.395	5.393	2013495	99969.4	20.141	BB
Endrin	5.951	5.951	2051865	99144.3	20.696	BV
DDD	6.192	6.196	1323662	66411.8	19.931	SV
Endosulfan II	6.401	6.401	2211777	103675.6	21.334	VS
DDT	6.953	6.956	1542471	74582.2	20.681	SB
Endrin Aldehyde	7.255	7.257	2133114	96524.7	22.099	SB
Endosulfan Sulfate	8.097	8.103	2386884	111570.2	21.394	BB
Methoxychlor	9.365	9.371	9072734	45652.3	213.396	BV
Endrin Ketone	9.825	9.828	2541221	123295.7	20.611	SB
DCB	12.132	12.133	2981388	145864.8	20.439	II

TM 01-29-16

744

INITIAL CALIBRATION VERIFICATION
METHOD EPA 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20038A 01/21/2016 04:07
Conc Cont LFID & Datetime: RA20043A 01/21/2016 05:49
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	335038.6	177492544	529.77	6		20

xu 01-29-16

INITIAL CALIBRATION VERIFICATION
METHOD EPA 8081

Lab Name : EMAX Laboratories, Inc.
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20038B 01/21/2016 04:07
Conc Cont LFID & Datetime: RA20043B 01/21/2016 05:49
CONC UNIT : PPB

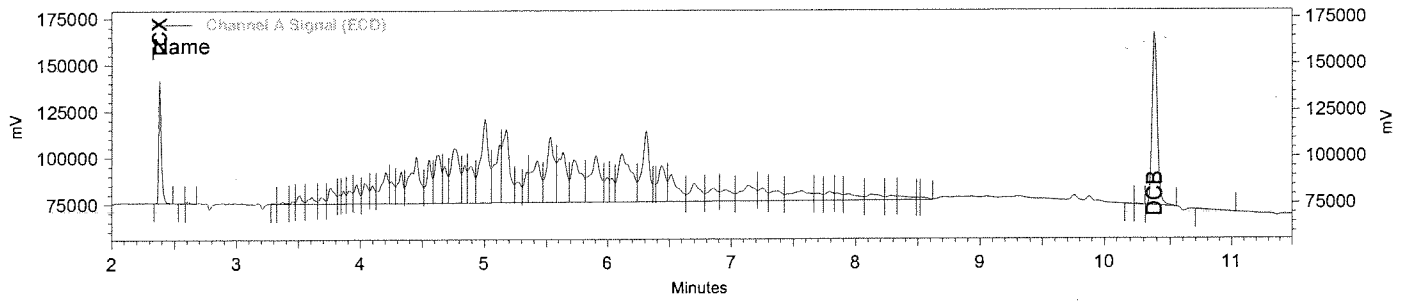
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	64631.4	35005520	541.62	8		20

01-29-16

746

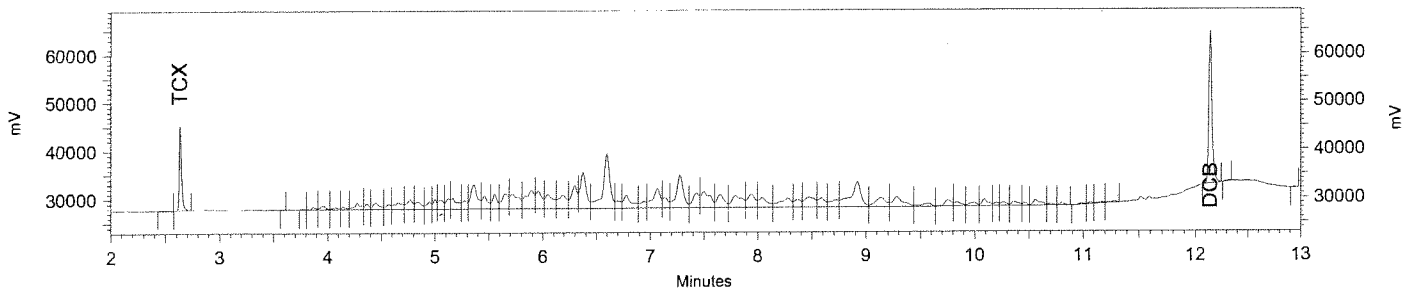
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: ITOF9A2001 (500/25ppb TOXA ICV)
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RA20\RA20043.dat
User: ESanto
Acquired: 01/21/16 05:49:11
Printed: 01/25/16 18:25:24



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.380	5240393	223052.9	23.49	BI
DCB	10.381	10.380	13984645	576095.1	24.27	BI
Toxaphene			177492545	335038.6	529.77	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.632	1366931	53825.0	25.40	BI
DCB	12.143	12.143	3643568	146761.8	24.83	IB
Toxaphene			35005522	64631.4	541.62	

RO 01-29-16

747

DAILY CALIBRATIONS

PEM PEST BREAKDOWN CALCULATION
METHOD 8081

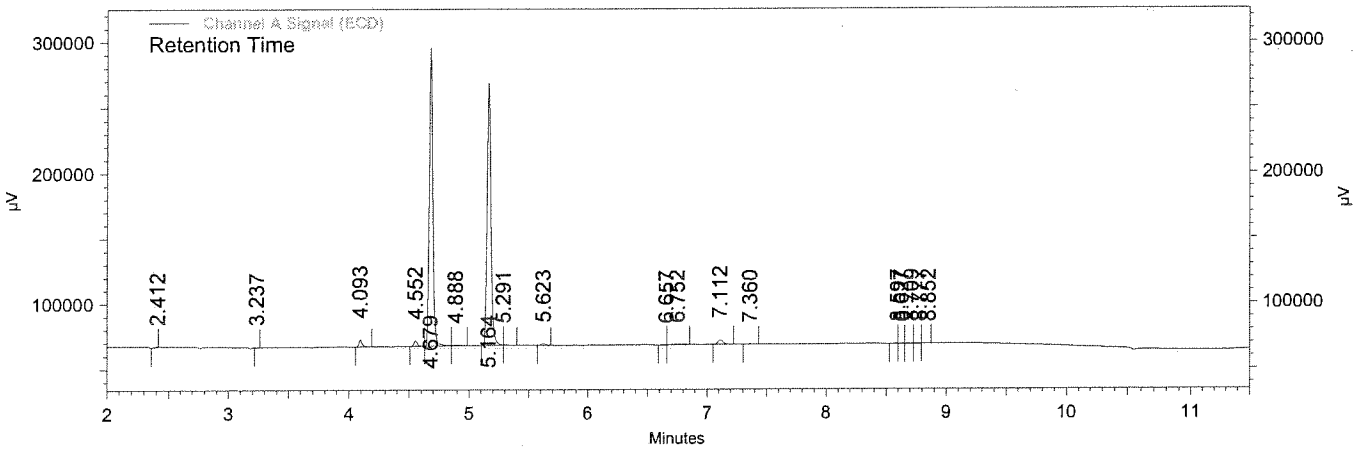
Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.32UM 30MX0.32MMIDX0.25UM
PEM LFID & Datetime : RB19027A RB19027B 02/19/16 21:01

Base on AREA

	AREA				% Breakdown				
LFID	DDD	DDE	DDT	TOTAL	DDD	DDE	TOTAL	QL	QCLIMIT
RB19027A	0.0	531889.0	24955012.0	25486900.0	0.00	2.09	2.09		15
RB19027B	0.0	143838.0	7923088.0	8066926.0	0.00	1.78	1.78		15
LFID	ENDRIN	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	ENDRIN ALDEHYDE	ENDRIN KETONE	TOTAL	QL	QCLIMIT
RB19027A	25756328.0	189808.0	536292.0	26482428.0	0.72	2.03	2.74		15
RB19027B	9597264.0	51105.0	187560.0	9835929.0	0.52	1.91	2.43		15

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19027.dat
User: ESanto
Acquired: 02/19/16 21:01:30
Printed: 02/22/16 14:28:47

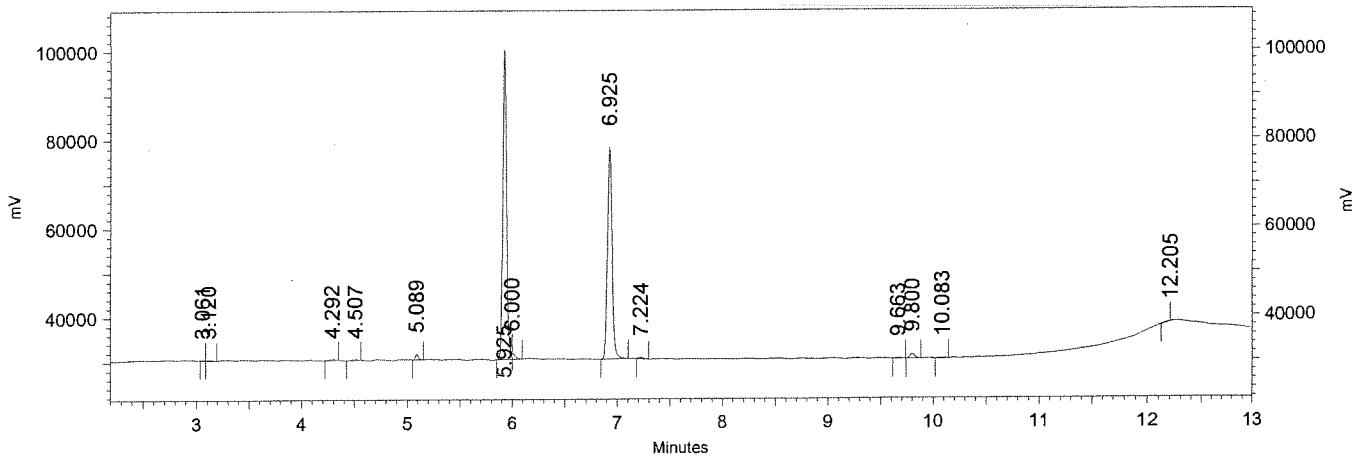


Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.371				0.000 BDL	
alpha-BHC	2.688				0.000 BDL	
gamma-BHC	2.872				0.000 BDL	
beta-BHC	2.920				0.000 BDL	
delta-BHC	3.028				0.000 BDL	
Heptachlor	3.153				0.000 BDL	
Aldrin	3.352				0.000 BDL	
Heptachlor Epoxide	3.807				0.000 BDL	
gamma-Chlordane	3.913				0.000 BDL	
alpha-Chlordane	4.033				0.000 BDL	
DDE	4.103	4.093	531889	343789.3	1.547	BS
Endosulfan I	4.167				0.000 BDL	
Dieldrin	4.417				0.000 BDL	
Endrin	4.689	4.679	25756327	343628.3	74.954	VV
DDD	4.780				0.000 BDL	
Endosulfan II	4.980				0.000 BDL	
DDT	5.173	5.164	24955011	312997.5	79.729	SS
Endrin aldehyde	5.632	5.623	189808	326603.1	0.581	BS
Methoxychlor	6.069				0.000 BDL	
Endosulfan Sulfate	6.483				0.000 BDL	
Endrin Ketone	7.123	7.112	536292	446868.0	1.200	BB
DCB	10.329				0.000 BDL	

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: PEF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19027.dat
User: ESanto
Acquired: 02/19/16 21:01:30
Printed: 02/22/16 14:28:47



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.627				0.000 BDL	
alpha-BHC	3.004				0.000 BDL	
gamma-BHC	3.237				0.000 BDL	
beta-BHC	3.285				0.000 BDL	
delta-BHC	3.508				0.000 BDL	
Heptachlor	3.569				0.000 BDL	
Aldrin	3.852				0.000 BDL	
Heptachlor Epoxide	4.435				0.000 BDL	
gamma-Chlordane	4.665				0.000 BDL	
alpha-Chlordane	4.861				0.000 BDL	
Endosulfan I	4.952				0.000 BDL	
DDE	5.093	5.089	143838	95539.7	1.506	SB
Dieldrin	5.375				0.000 BDL	
Endrin	5.929	5.925	9597264	99144.3	96.801	SS
DDD	6.171				0.000 BDL	
Endosulfan II	6.377				0.000 BDL	
DDT	6.927	6.925	7923088	74582.2	106.233	BS
Endrin Aldehyde	7.225	7.224	51105	96524.7	0.529	BB
Endosulfan Sulfate	8.065				0.000 BDL	
Methoxychlor	9.337				0.000 BDL	
Endrin Ketone	9.803	9.800	187560	123295.7	1.521	BB
DCB	12.124				0.000 BDL	

CONTINUE CALIBRATION
METHOD 8081

Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20021A 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19028A 02/19/2016 21:21
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	2.683	2.663	2.703	20.0	332088.0	6138868	18.49	-8		20
gamma-BHC	2.867	2.845	2.889	20.0	327031.5	6038179	18.46	-8		20
beta-BHC	2.916	2.894	2.938	20.0	191799.2	3480612	18.15	-9		20
delta-BHC	3.023	3.002	3.044	20.0	355796.5	6611133	18.58	-7		20
Heptachlor	3.148	3.124	3.172	20.0	340376.6	5932430	17.43	-13		20
Aldrin	3.345	3.319	3.371	20.0	354684.2	6324420	17.83	-11		20
Heptachlor Epoxide	3.803	3.773	3.833	20.0	359106.5	6832346	19.03	-5		20
gamma-Chlordane	3.908	3.876	3.940	20.0	392256.3	7284997	18.57	-7		20
alpha-Chlordane	4.029	3.997	4.061	20.0	394418.4	7075358	17.94	-10		20
DDE	4.099	4.067	4.131	40.0	343789.3	12659721	36.82	-8		20
Endosulfan I	4.163	4.128	4.198	20.0	419333.4	7432807	17.73	-11		20
Dieldrin	4.412	4.380	4.444	40.0	357644.9	13016335	36.40	-9		20
Endrin	4.684	4.654	4.714	40.0	343628.3	12098995	35.21	-12		20
DDD	4.776	4.746	4.806	40.0	268752.2	9950965	37.03	-7		20
Endosulfan II	4.976	4.947	5.005	40.0	367000.6	12865855	35.06	-12		20
DDT	5.169	5.139	5.199	40.0	312997.5	11224968	35.86	-10		20
Endrin Aldehyde	5.628	5.596	5.660	40.0	326603.0	11128768	34.07	-15		20
Methoxychlor	6.065	6.027	6.103	200.0	164669.2	25992480	192.29	-4		20
Endosulfan Sulfate	6.480	6.444	6.516	40.0	409015.5	14132137	34.55	-14		20
Endrin Ketone	7.123	7.087	7.159	40.0	446867.9	15627841	34.97	-13		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.365	2.345	2.385	20.0	210406.3	3890812	18.49	-8		20
DCB	10.328	10.278	10.378	20.0	567820.8	9540775	16.80	-16		20

CONTINUE CALIBRATION
METHOD 8081

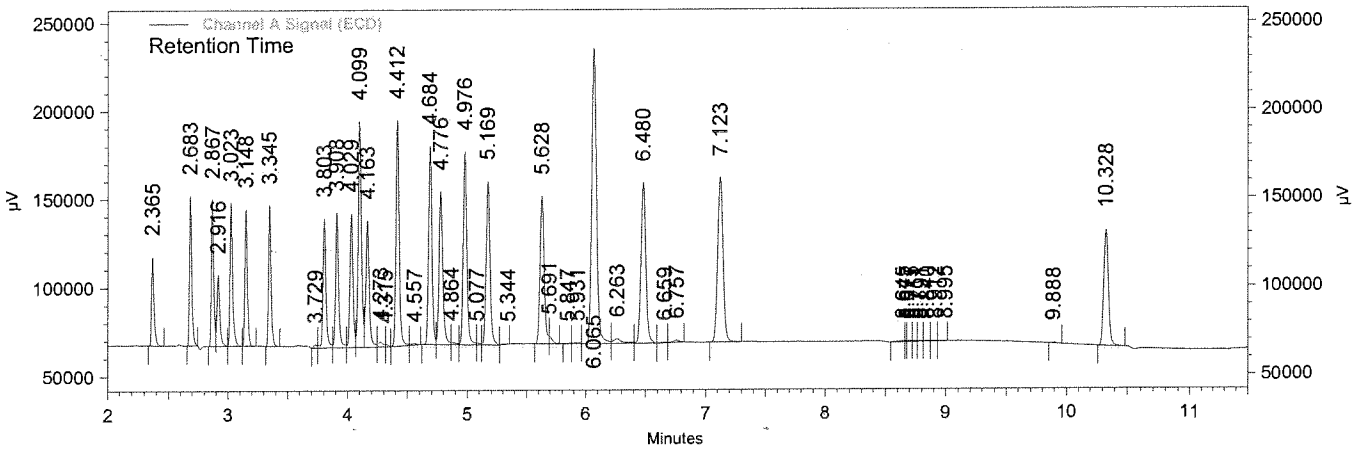
Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20021B 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19028B 02/19/2016 21:21
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	3.000	2.982	3.018	20.0	72036.4	1730890	24.03	20		20
gamma-BHC	3.233	3.216	3.250	20.0	79373.3	1848809	23.29	16		20
beta-BHC	3.283	3.266	3.300	20.0	51602.9	1157144	22.42	12		20
delta-BHC	3.505	3.488	3.522	20.0	77332.0	1826827	23.62	18		20
Heptachlor	3.567	3.549	3.585	20.0	87869.0	1921492	21.87	9		20
Aldrin	3.849	3.830	3.868	20.0	103752.3	2178252	21.00	5		20
Heptachlor Epoxide	4.433	4.410	4.456	20.0	97064.9	2112608	21.76	9		20
gamma-Chlordane	4.664	4.643	4.685	20.0	102558.3	2194554	21.40	7		20
alpha-Chlordane	4.861	4.843	4.879	20.0	101533.5	2181241	21.48	7		20
DDE	5.093	5.077	5.109	40.0	95539.7	4203136	43.99	10		20
Endosulfan I	4.951	4.932	4.970	20.0	105819.2	2246246	21.23	6		20
Dieldrin	5.375	5.358	5.392	40.0	99969.4	4398793	44.00	10		20
Endrin	5.929	5.909	5.949	40.0	99144.3	4280542	43.17	8		20
DDD	6.172	6.153	6.191	40.0	66411.8	3039098	45.76	14		20
Endosulfan II	6.379	6.357	6.401	40.0	103675.6	4417291	42.61	7		20
DDT	6.931	6.907	6.955	40.0	74582.2	3185033	42.71	7		20
Endrin Aldehyde	7.229	7.207	7.251	40.0	96524.7	3922959	40.64	2		20
Methoxychlor	9.343	9.315	9.371	200.0	45652.3	9398253	221.33	11		20
Endosulfan Sulfate	8.071	8.047	8.095	40.0	111570.2	4617011	41.38	3		20
Endrin Ketone	9.807	9.777	9.837	40.0	123295.7	5256716	42.63	7		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.623	2.600	2.646	20.0	53703.4	1203421	22.41	12		20
DCB	12.123	12.088	12.158	20.0	145864.8	2738626	18.77	-6		20

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19028.dat
User: ESanto
Acquired: 02/19/16 21:21:57
Printed: 02/22/16 14:30:31



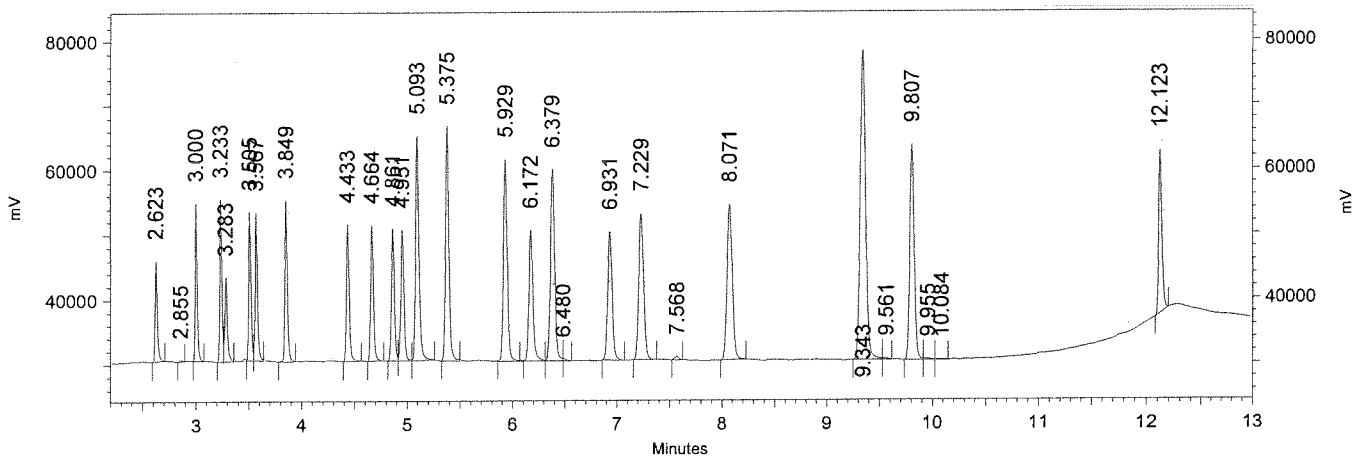
Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.365	3890812	210406.3	18.492	BB
alpha-BHC	2.683	2.683	6138868	332088.1	18.486	BI
gamma-BHC	2.867	2.867	6038179	327031.5	18.464	BV
beta-BHC	2.916	2.916	3480612	191799.2	18.147	VV
delta-BHC	3.023	3.023	6611133	355796.5	18.581	VB
Heptachlor	3.148	3.148	5932430	340376.6	17.429	BB
Aldrin	3.345	3.345	6324420	354684.2	17.831	BS
Heptachlor Epoxide	3.803	3.803	6832346	359106.5	19.026	SV
gamma-Chlordane	3.908	3.908	7284997	392256.3	18.572	VV
alpha-Chlordane	4.029	4.029	7075358	394418.4	17.939	VV
DDE	4.099	4.099	12659721	343789.3	36.824	VV
Endosulfan I	4.163	4.163	7432807	419333.4	17.725	VV
Dieldrin	4.412	4.412	13016335	357645.0	36.395	BV
Endrin	4.684	4.684	12098995	343628.3	35.210	BV
DDD	4.776	4.776	9950965	268752.2	37.027	VS
Endosulfan II	4.976	4.976	12865855	367000.6	35.057	VS
DDT	5.169	5.169	11224968	312997.5	35.863	VB
Endrin aldehyde	5.628	5.628	11128768	326603.1	34.074	SS
Methoxychlor	6.065	6.065	25992481	164669.2	192.294	SV
Endosulfan Sulfate	6.480	6.480	14132137	409015.5	34.552	VB
Endrin Ketone	7.123	7.123	15627841	446868.0	34.972	BB
DCB	10.328	10.328	9540775	567820.8	16.802	BI

754

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19028.dat
User: ESanto
Acquired: 02/19/16 21:21:57
Printed: 02/22/16 14:30:31



Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.623	1203421	53703.4	22.409	SI
alpha-BHC	3.000	3.000	1730890	72036.4	24.028	II
gamma-BHC	3.233	3.233	1848809	79373.3	23.293	BV
beta-BHC	3.283	3.283	1157144	51602.9	22.424	VB
delta-BHC	3.505	3.505	1826827	77332.0	23.623	BV
Heptachlor	3.567	3.567	1921492	87869.0	21.868	VS
Aldrin	3.849	3.849	2178252	103752.3	20.995	BS
Heptachlor Epoxide	4.433	4.433	2112608	97064.9	21.765	BS
gamma-Chlordane	4.664	4.664	2194554	102558.3	21.398	BB
alpha-Chlordane	4.861	4.861	2181241	101533.5	21.483	BV
Endosulfan I	4.951	4.951	2246246	105819.2	21.227	VB
DDE	5.093	5.093	4203136	95539.7	43.994	BS
Dieldrin	5.375	5.375	4398793	99969.4	44.001	BS
Endrin	5.929	5.929	4280542	99144.3	43.175	SV
DDD	6.172	6.172	3039098	66411.8	45.761	SV
Endosulfan II	6.379	6.379	4417291	103675.6	42.607	VS
DDT	6.931	6.931	3185033	74582.2	42.705	SS
Endrin Aldehyde	7.229	7.229	3922959	96524.7	40.642	BB
Endosulfan Sulfate	8.071	8.071	4617011	111570.2	41.382	BS
Methoxychlor	9.343	9.343	9398253	45652.3	221.329	BV
Endrin Ketone	9.807	9.807	5256716	123295.7	42.635	SV
DCB	12.123	12.123	2738626	145864.8	18.775	SB

CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20038A 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19029A 02/19/2016 21:42
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	335038.6	137448976	410.25	-18		20

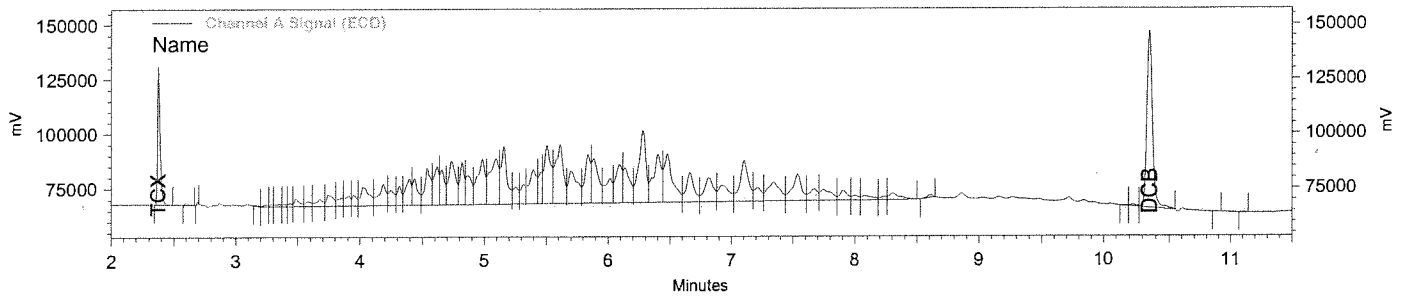
CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20038B 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19029B 02/19/2016 21:42
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	64631.4	31417328	486.10	-3		20

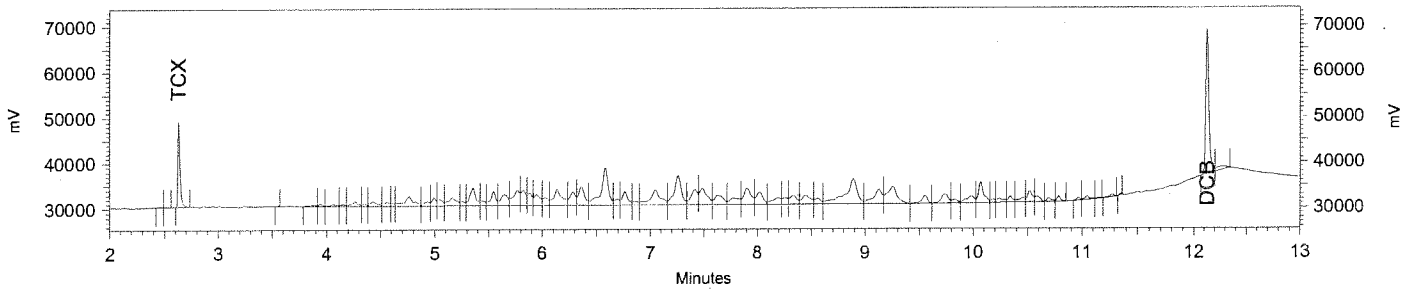
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CTOF9A2056
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19029.dat
User: ESanto
Acquired: 02/19/16 21:42:27
Printed: 02/22/16 16:19:25



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.375	5004306	223052.9	22.44	BI
DCB	10.381	10.351	12595179	576095.1	21.86	VI
Toxaphene			137448972	335038.6	410.25	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.631	1469120	53825.0	27.29	BI
DCB	12.143	12.127	3564031	146761.8	24.28	IV
Toxaphene			31417329	64631.4	486.10	

CONTINUE CALIBRATION
METHOD 8081

Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20021A 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19039A 02/20/2016 01:06
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	2.688	2.668	2.708	20.0	332088.0	7262773	21.87	9		20
gamma-BHC	2.872	2.850	2.894	20.0	327031.5	6789652	20.76	4		20
beta-BHC	2.920	2.898	2.942	20.0	191799.2	3827296	19.95	-0		20
delta-BHC	3.027	3.006	3.048	20.0	355796.5	7961739	22.38	12		20
Heptachlor	3.155	3.131	3.179	20.0	340376.6	6789951	19.95	-0		20
Aldrin	3.353	3.327	3.379	20.0	354684.2	6982947	19.69	-2		20
Heptachlor Epoxide	3.812	3.782	3.842	20.0	359106.5	7057749	19.65	-2		20
gamma-Chlordane	3.919	3.887	3.951	20.0	392256.3	7515647	19.16	-4		20
alpha-Chlordane	4.040	4.008	4.072	20.0	394418.4	7627277	19.34	-3		20
DDE	4.108	4.076	4.140	40.0	343789.3	14254399	41.46	4		20
Endosulfan I	4.175	4.140	4.210	20.0	419333.4	7572933	18.06	-10		20
Dieldrin	4.427	4.395	4.459	40.0	357644.9	14587000	40.79	2		20
Endrin	4.700	4.670	4.730	40.0	343628.3	13939098	40.56	1		20
DDD	4.789	4.759	4.819	40.0	268752.2	11755162	43.74	9		20
Endosulfan II	4.992	4.963	5.021	40.0	367000.6	14263613	38.87	-3		20
DDT	5.187	5.157	5.217	40.0	312997.5	12764879	40.78	2		20
Endrin Aldehyde	5.648	5.616	5.680	40.0	326603.0	11602818	35.53	-11		20
Methoxychlor	6.088	6.050	6.126	200.0	164669.2	30368656	228.25	14		20
Endosulfan Sulfate	6.504	6.468	6.540	40.0	409015.5	15873836	38.81	-3		20
Endrin Ketone	7.147	7.111	7.183	40.0	446867.9	17918564	40.10	0		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.369	2.349	2.389	20.0	210406.3	4583466	21.78	9		20
DCB	10.347	10.297	10.397	20.0	567820.8	10868120	19.14	-4		20

CONTINUE CALIBRATION
METHOD 8081

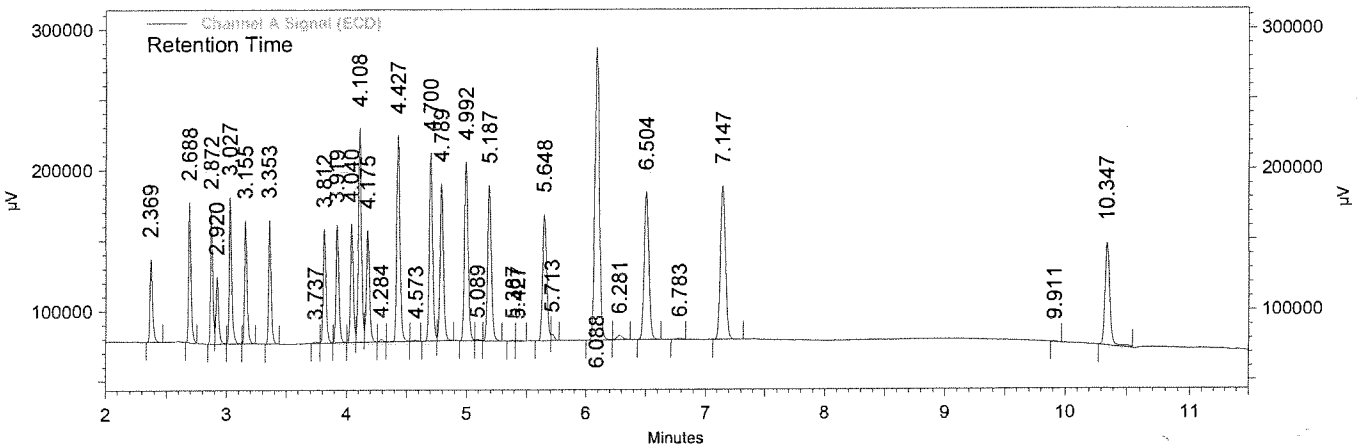
Lab Name : EMAX Inc
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20021B 01/20/2016 22:21
Conc Cont LFID & Datetime: RB19039B 02/20/2016 01:06
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
alpha-BHC	3.001	2.983	3.019	20.0	72036.4	2036927	28.28	41	*	20
gamma-BHC	3.236	3.219	3.253	20.0	79373.3	2209243	27.83	39	*	20
beta-BHC	3.283	3.266	3.300	20.0	51602.9	1330413	25.78	29	*	20
delta-BHC	3.507	3.490	3.524	20.0	77332.0	2360230	30.52	53	*	20
Heptachlor	3.569	3.551	3.587	20.0	87869.0	2167908	24.67	23	*	20
Aldrin	3.852	3.833	3.871	20.0	103752.3	2429728	23.42	17		20
Heptachlor Epoxide	4.437	4.414	4.460	20.0	97064.9	2372785	24.44	22	*	20
gamma-Chlordane	4.668	4.647	4.689	20.0	102558.3	2504319	24.42	22	*	20
alpha-Chlordane	4.865	4.847	4.883	20.0	101533.5	2496037	24.58	23	*	20
DDE	5.096	5.080	5.112	40.0	95539.7	4759013	49.81	25	*	20
Endosulfan I	4.955	4.936	4.974	20.0	105819.2	2573901	24.32	22	*	20
Dieldrin	5.380	5.363	5.397	40.0	99969.4	5030521	50.32	26	*	20
Endrin	5.935	5.915	5.955	40.0	99144.3	4932730	49.75	24	*	20
DDD	6.175	6.156	6.194	40.0	66411.8	3659700	55.11	38	*	20
Endosulfan II	6.383	6.361	6.405	40.0	103675.6	5058809	48.79	22	*	20
DDT	6.933	6.909	6.957	40.0	74582.2	3858951	51.74	29	*	20
Endrin Aldehyde	7.236	7.214	7.258	40.0	96524.7	4149047	42.98	7		20
Methoxychlor	9.347	9.319	9.375	200.0	45652.3	11454550	271.44	36	*	20
Endosulfan Sulfate	8.077	8.053	8.101	40.0	111570.2	5223335	46.82	17		20
Endrin Ketone	9.812	9.782	9.842	40.0	123295.7	6033418	48.94	22	*	20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
TCX	2.623	2.600	2.646	20.0	53703.4	1298736	24.18	21	*	20
DCB	12.127	12.092	12.162	20.0	145864.8	3028179	20.76	4		20

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2057
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19039.dat
User: ESanto
Acquired: 02/20/16 01:06:09
Printed: 02/22/16 14:33:30



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.365	2.369	4583466	210406.3	21.784	BB
alpha-BHC	2.683	2.688	7262773	332088.1	21.870	BS
gamma-BHC	2.867	2.872	6789652	327031.5	20.761	BV
beta-BHC	2.916	2.920	3827296	191799.2	19.955	VV
delta-BHC	3.023	3.027	7961739	355796.5	22.377	VV
Heptachlor	3.148	3.155	6789951	340376.6	19.948	VS
Aldrin	3.345	3.353	6982947	354684.2	19.688	BS
Heptachlor Epoxide	3.803	3.812	7057749	359106.5	19.654	VV
gamma-Chlordane	3.908	3.919	7515647	392256.3	19.160	VV
alpha-Chlordane	4.029	4.040	7627277	394418.4	19.338	VV
DDE	4.099	4.108	14254399	343789.3	41.463	VV
Endosulfan I	4.163	4.175	7572933	419333.4	18.059	VV
Dieldrin	4.412	4.427	14587000	357645.0	40.786	SV
Endrin	4.684	4.700	13939098	343628.3	40.564	BV
DDD	4.776	4.789	11755162	268752.2	43.740	VS
Endosulfan II	4.976	4.992	14263613	367000.6	38.865	BV
DDT	5.169	5.187	12764879	312997.5	40.783	VB
Endrin aldehyde	5.628	5.648	11602818	326603.1	35.526	BS
Methoxychlor	6.065	6.088	30368655	164669.2	228.252	SV
Endosulfan Sulfate	6.480	6.504	15873836	409015.5	38.810	BB
Endrin Ketone	7.123	7.147	17918564	446868.0	40.098	BB
DCB	10.328	10.347	10868120	567820.8	19.140	BI

Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CCPF9A2057
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\CPF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19039.dat
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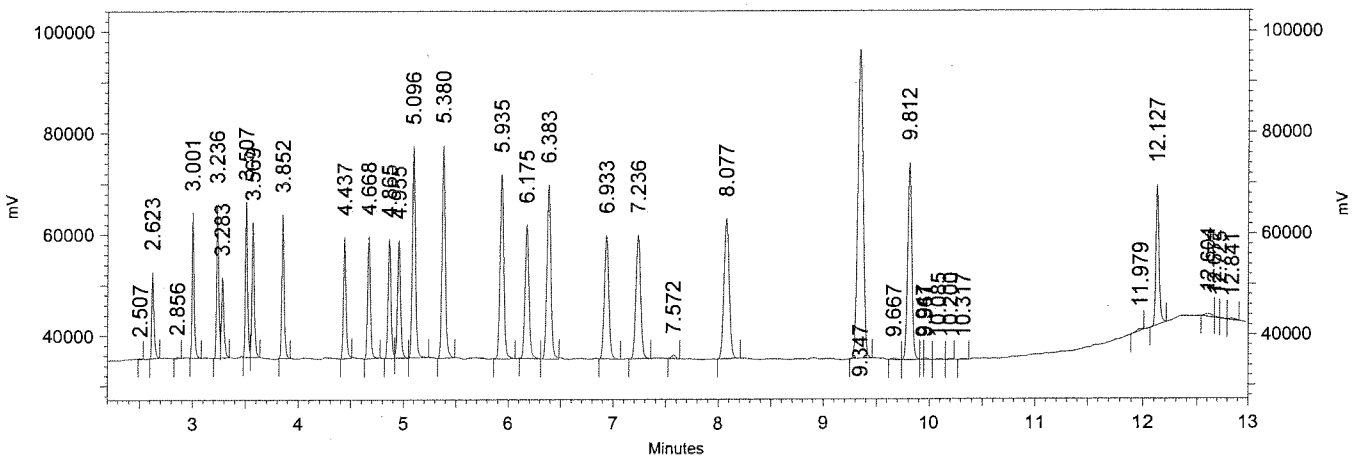


Channel B Signal
(ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration (ppb)	Integration Codes
TCX	2.623	2.623	1298736	53703.4	24.183	SI
alpha-BHC	3.000	3.001	2036927	72036.4	28.276	II
gamma-BHC	3.233	3.236	2209243	79373.3	27.834	BV
beta-BHC	3.283	3.283	1330413	51602.9	25.782	VI
delta-BHC	3.505	3.507	2360230	77332.0	30.521	BV
Heptachlor	3.567	3.569	2167908	87869.0	24.672	VI
Aldrin	3.849	3.852	2429728	103752.3	23.419	II
Heptachlor Epoxide	4.433	4.437	2372785	97064.9	24.445	SS
gamma-Chlordane	4.664	4.668	2504319	102558.3	24.418	BB
alpha-Chlordane	4.861	4.865	2496037	101533.5	24.583	BV
Endosulfan I	4.951	4.955	2573901	105819.2	24.324	VB
DDE	5.093	5.096	4759013	95539.7	49.812	BS
Dieldrin	5.375	5.380	5030521	99969.4	50.321	BS
Endrin	5.929	5.935	4932730	99144.3	49.753	SI
DDD	6.172	6.175	3659700	66411.8	55.106	BB
Endosulfan II	6.379	6.383	5058809	103675.6	48.795	BS
DDT	6.931	6.933	3858951	74582.2	51.741	BB
Endrin Aldehyde	7.229	7.236	4149047	96524.7	42.984	SB
Endosulfan Sulfate	8.071	8.077	5223335	111570.2	46.817	BS
Methoxychlor	9.343	9.347	11454550	45652.3	271.442	SS
Endrin Ketone	9.807	9.812	6033418	123295.7	48.935	BV
DCB	12.123	12.127	3028179	145864.8	20.760	IB

CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Column : RTX-CLPESTICIDES
Column size ID : 30MX0.32MMIDX0.32UM
Mid Conc Init LFID & Datetime: RA20038A 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19040A 02/20/2016 01:26
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	335038.6	161745120	482.77	-3		20

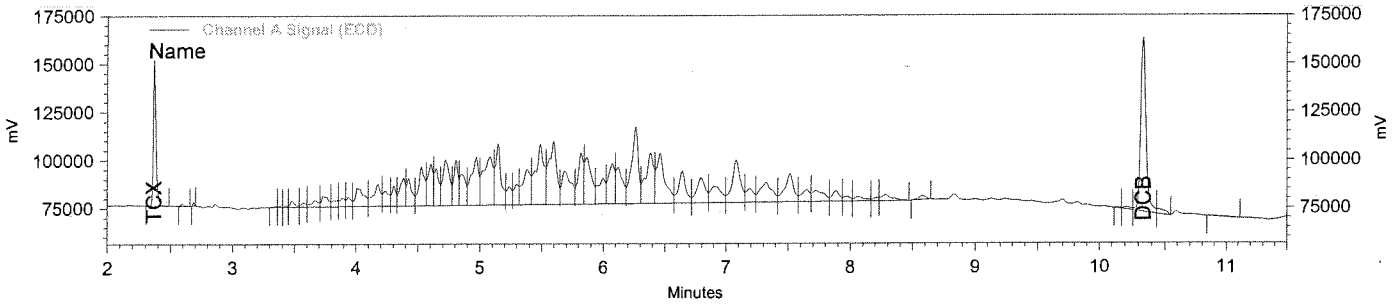
CONTINUE CALIBRATION
METHOD EPA 8081

Lab Name : EMAX
Instrument ID : F9 (PE CLARUS680 GC)
GC Columm : RTX-CLPESTICIDES2
Column size ID : 30MX0.32MMIDX0.25UM
Mid Conc Init LFID & Datetime: RA20038B 01/21/2016 04:07
Conc Cont LFID & Datetime: RB19040B 02/20/2016 01:26
CONC UNIT : PPB

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Toxaphene	0.000	0.000	0.000	500.0	64631.4	36724852	568.22	14		20

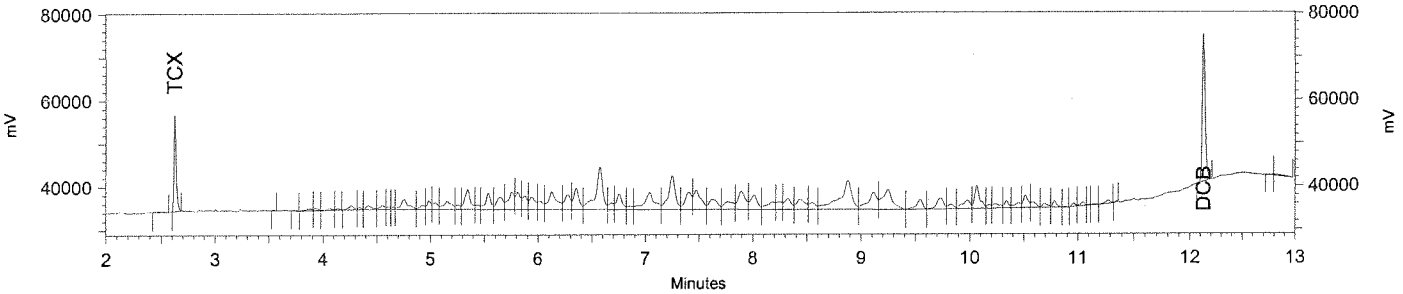
Pesticides by GC/ECD
EMAX Analytical Laboratories, Inc.

Sample ID: CTOF9A2057
Instrument ID: F9
Method Name: C:\EZChrom Elite\Enterprise\Projects\GCF9\Methods\TOF9A20.met
Data: C:\EZChrom Elite\Enterprise\Projects\GCF9\Data\RB19\RB19040.dat
User: ESanto
Acquired: 02/20/16 01:26:29
Printed: 02/22/16 16:20:30



Channel A Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.379	2.369	5972970	223052.9	26.78	BI
DCB	10.381	10.335	13951063	576095.1	24.22	VV
Toxaphene			161745120	335038.6	482.77	



Channel B Signal (ECD) Results

Name	Expected RT (mins)	Retention Time (mins)	Area	Average RF	ESTD concentration	Integration Codes
TCX	2.632	2.625	1682807	53825.0	31.26	BI
DCB	12.143	12.129	3717017	146761.8	25.33	IB
Toxaphene			36724853	64631.4	568.22	

ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PESTICIDES

Note: For samples and relevant QCs/Standards analyzed, refer to ~~attached~~ analytical sequence.

Comments:

ICAL LEVEL PEST	MIX 3	CONCENTRATION (ppb) PEST	MIX 3
1	9	1.25/2.5/12.5	1.25/1.25
2	10	2.5/5/25	2.5/2.5
3	11	5/10/50	5/5
4	12	10/20/100	10/10
5	13	20/40/200	20/20
6	14	40/80/400	40/40
7	15	60/120/600	60/60
8	16	800/160/800	80/80

ICAL LEVEL TOXAPHENE	CONCENTRATION (ppb)
1	50/2.5
2	100/5
3	250/12.5
4	500/25
5	750/37.5
6	1000/50
7	1500/75
8	2000/100

ICAL LEVEL ~~TOXAPHENE~~ (CHLORDANE)	CONCENTRATION (ppb)
1	25/1.25
2	50/2.5
3	100/5
4	250/12.5
5	500/25
6	750/37.5
7	1000/50
8	1500/75

1-20-16

Book #: AF9-006

Instrument No.: F9

Analytical Sequence: RA20

Method File: CPF9A20, TOF9A20, CRF9A20, CPF9A20A

Analytical Batch: RA20008

SOP #	Rev. #
☑ EMAX-8081	8
☐ EMAX-8082	5
☐ EMAX-608	1

ICAL REFERENCE

ICAL ID	BATCH	DATE
CPF9A20	RA20	01-20-2016
TOF9A20	RA20	01-20-2016
CRF9A20	RA20	01-20-2016
CPF9A20A	RA20	01-20-2016

STANDARDS ID		Conc (µg/L)
Hexane	SWLA-005-16-01	N/A
IB	SSIC-12-85-02	40/40
PEM	SSIC-12-87-01	100/100
PEST ICAL	SSIC-12-92-02	see comments
PEST ICV	SSIC-12-92-03	20/20
MIX 3 ICAL	SSIC-12-93-01	see comments
MIX 3 ICV	SSIC-12-93-02	20/20
TOXA ICAL	SSIC-12-93-03	see comments
TOXA ICV	SSIC-12-94-01	500/25
CHLO ICAL	SSIC-12-94-02	see comments
CHLO ICV	SSIC-12-94-03	500/25

Column	
	☐ A. Elite-CLP 1 B. Elite-CLP 2
	☑ A. STX CLPEST 1 B. STX CLPEST 2 / A. RTX CLPEST 1 B. STX CLPEST 2
	☐ A. ZB-MULTI RES 1 B. ZB-MULTI RES 2

ELECTRONIC DATA ARCHIVAL

Location	Date
☐ EZChrom Elite_PEST F9	

Analyzed By: [signature] Analysis Date: 01-20-2016

Disposed By: Disposal Date:

This page is checked during data review

Sequence: RA20.seq

Run #	Status	Vial	Volume	Sample ID	Method	Filename	Multiplie	Description
1		1	1	HEXANE RINSE	CPF9A20.met	RA20001.dat	1	
2		2	1	CHLO PRIME	CRF9A20.met	RA20002.dat	1	
3		3	1	TOXA PRIME	TOF9A20.met	RA20003.dat	1	
4		4	1	PEST PRIME	CPF9A20.met	RA20004.dat	1	
5		5	1	MIX3 PRIME	CPF9A20.met	RA20005.dat	1	
6		6	1	IBF9A2001	CPF9A20.met	RA20006.dat	1	
7		7	1	PEF9A2001	CPF9A20.met	RA20007.dat	1	
8		8	1	CRF9A2001 (25/1.25ppb CHLO ICAL)	CRF9A20.met	RA20008.dat	1	
9		9	1	CRF9A2002 (50/2.5ppb CHLO ICAL)	CRF9A20.met	RA20009.dat	1	
10		10	1	CRF9A2003 (100/5ppb CHLO ICAL)	CRF9A20.met	RA20010.dat	1	
11		11	1	CRF9A2004 (250/12.5ppb CHLO ICAL)	CRF9A20.met	RA20011.dat	1	
12		12	1	CRF9A2005 (500/25ppb CHLO ICAL)	CRF9A20.met	RA20012.dat	1	
13		13	1	CRF9A2006 (750/37.5ppb CHLO ICAL)	CRF9A20.met	RA20013.dat	1	
14		14	1	CRF9A2007 (1000/50ppb CHLO ICAL)	CRF9A20.met	RA20014.dat	1	
15		15	1	CRF9A2008 (1500/75ppb CHLO ICAL)	CRF9A20.met	RA20015.dat	1	
16		16	1	ICRF9A2001 (500/25ppb CHLO ICV)	CRF9A20.met	RA20016.dat	1	
17		17	1	CPF9A2001 (1.25/2.5/12.5ppb PEST ICAL)	CPF9A20.met	RA20017.dat	1	
18		18	1	CPF9A2002 (2.5/5/25ppb PEST ICAL)	CPF9A20.met	RA20018.dat	1	
19		19	1	CPF9A2003 (5/10/50ppb PEST ICAL)	CPF9A20.met	RA20019.dat	1	
20		20	1	CPF9A2004 (10/20/100ppb PEST ICAL)	CPF9A20.met	RA20020.dat	1	
21		21	1	CPF9A2005 (20/40/200ppb PEST ICAL)	CPF9A20.met	RA20021.dat	1	
22		22	1	CPF9A2006 (40/80/400ppb PEST ICAL)	CPF9A20.met	RA20022.dat	1	
23		23	1	CPF9A2007 (60/120/600ppb PEST ICAL)	CPF9A20.met	RA20023.dat	1	
24		24	1	CPF9A2008 (80/160/800ppb PEST ICAL)	CPF9A20.met	RA20024.dat	1	
25		25	1	CPF9A2009 (1.25/1.25ppb MIX3 ICAL)	CPF9A20.met	RA20025.dat	1	
26		26	1	CPF9A2010 (2.5/2.5ppb MIX3 ICAL)	CPF9A20.met	RA20026.dat	1	
27		27	1	CPF9A2011 (5/5ppb MIX3 ICAL)	CPF9A20.met	RA20027.dat	1	
28		28	1	CPF9A2012 (10/10ppb MIX3 ICAL)	CPF9A20.met	RA20028.dat	1	
29		29	1	CPF9A2013 (20/20ppb MIX3 ICAL)	CPF9A20.met	RA20029.dat	1	
30		30	1	CPF9A2014 (40/40ppb MIX3 ICAL)	CPF9A20.met	RA20030.dat	1	
31		31	1	CPF9A2015 (60/60ppb MIX3 ICAL)	CPF9A20.met	RA20031.dat	1	
32		32	1	CPF9A2016 (80/80ppb MIX3 ICAL)	CPF9A20.met	RA20032.dat	1	
33		33	1	ICPF9A2001 (20/200ppb PEST ICV)	CPF9A20.met	RA20033.dat	1	
34		34	1	ICPF9A2001A (20/20ppb MIX3 ICV)	CPF9A20.met	RA20034.dat	1	
35		35	1	TOF9A2001 (50/2.5ppb TOXA ICAL)	TOF9A20.met	RA20035.dat	1	
36		36	1	TOF9A2002 (100/5ppb TOXA ICAL)	TOF9A20.met	RA20036.dat	1	
37		37	1	TOF9A2003 (250/12.5ppb TOXA ICAL)	TOF9A20.met	RA20037.dat	1	
38		38	1	TOF9A2004 (500/25ppb TOXA ICAL)	TOF9A20.met	RA20038.dat	1	
39		39	1	TOF9A2005 (750/37.5ppb TOXA ICAL)	TOF9A20.met	RA20039.dat	1	
40		40	1	TOF9A2006 (1000/50ppb TOXA ICAL)	TOF9A20.met	RA20040.dat	1	
41		41	1	TOF9A2007 (1500/75ppb TOXA ICAL)	TOF9A20.met	RA20041.dat	1	
42		42	1	TOF9A2008 (2000/100ppb TOXA ICAL)	TOF9A20.met	RA20042.dat	1	
43		43	1	ITOF9A2001 (500/25ppb TOXA ICV)	TOF9A20.met	RA20043.dat	1	

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PESTICIDES

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #: AF9-006

Instrument No.: F9

Analytical Sequence: RB19

Method File: CPF9A20, TOF9A20

Analytical Batch: RB19017

SOP #	Rev. #
☑ EMAX-8081	8
☐ EMAX-8082	5
☐ EMAX-608	1

ICAL REFERENCE

ICAL ID	BATCH	DATE
CPF9A20	RA20	01-20-2016
TOF9A20	RA20	01-20-2016

STANDARDS ID		Conc (µg/L)
Hexane	SWLA-005-16-01	N/A
IB	SSIC-12-90-03	40/40
PEM	SSIC-12-96-01	100/100
PEST DCC	SSIC-12-95-01	20/40/200
TOXA DCC	SSIC-12-95-02	500/25

Column	
	☐ A. Elite-CLP 1 B. Elite-CLP 2
	☑ A. STX CLPEST 1 B. STX CLPEST 2 / A. RTX CLPEST 1 B. STX CLPEST 2
	☐ A. ZB-MULTI RES 1 B. ZB-MULTI RES 2

ELECTRONIC DATA ARCHIVAL

Location	Date
☐ EZChrom Elite_PEST F9	

Analyzed By: [illegible] Analysis Date: 02-19-2016

Disposed By: [illegible] Disposal Date: 02-22-2016

This page is checked during data review

Sequence: RB19.seq

Run #	Status	Vial	Volume	Sample ID	Method	Filename	Multiplie	Description
1		1	1	HEXANE RINSE	CPF9A20.met	RB19001.dat	1	
2		2	1	PEST PRIME	CPF9A20.met	RB19002.dat	1	
3		3	1	IBF9A2053	CPF9A20.met	RB19003.dat	1	
4		4	1	PEF9A2053	CPF9A20.met	RB19004.dat	1	
5		5	1	CCPF9A2053	CPF9A20.met	RB19005.dat	1	
6		6	1	CTOF9A2053	TOF9A20.met	RB19006.dat	1	
7		7	1	B121-01 (QC WATER)	CPF9A20.met	RB19007.dat	1	
8		8	1	B017-01 (QC HYDROMATRIX)	CPF9A20.met	RB19008.dat	1	
9		9	1	B132-01 (QC TBA REAGENT)	CPF9A20.met	RB19009.dat	1	
10		10	1	IBF9A2054	CPF9A20.met	RB19010.dat	1	
11		11	1	PEF9A2054	CPF9A20.met	RB19011.dat	1	
12		12	1	CCPF9A2054	CPF9A20.met	RB19012.dat	1	
13		13	1	CTOF9A2054	TOF9A20.met	RB19013.dat	1	
14		14	1	B121-01 (QC WATER)	CPF9A20.met	RB19014.dat	1	
15		15	1	B017-01 (QC HYDROMATRIX)	CPF9A20.met	RB19015.dat	1	
16		16	1	B132-01 (QC TBA REAGENT)	CPF9A20.met	RB19016.dat	1	
17		17	1	CCPF9A2055	CPF9A20.met	RB19017.dat	1	
18	Acquirir	18	1	B121-01 (QC WATER)	CPF9A20.met	RB19018.dat	1	
19		19	1	B017-01 (QC HYDROMATRIX)	CPF9A20.met	RB19019.dat	1	
20		20	1	B132-01 (QC TBA REAGENT)	CPF9A20.met	RB19020.dat	1	
21		21	1	CPB030SB (S)	CPF9A20.met	RB19021.dat	1	
22		22	1	CPB030SL (S)	CPF9A20.met	RB19022.dat	1	
23		23	1	CPB030SC (S)	CPF9A20.met	RB19023.dat	1	
24		24	1	CPB030SX (S)	CPF9A20.met	RB19024.dat	1	
25		25	1	CPB030SY (S)	CPF9A20.met	RB19025.dat	1	
26		26	1	IBF9A2056	CPF9A20.met	RB19026.dat	1	
27		27	1	PEF9A2056	CPF9A20.met	RB19027.dat	1	
28		28	1	CCPF9A2056	CPF9A20.met	RB19028.dat	1	
29		29	1	CTOF9A2056	TOF9A20.met	RB19029.dat	1	
30		30	1	CPB025WB	CPF9A20.met	RB19030.dat	1	
31		31	1	CPB025WL	CPF9A20.met	RB19031.dat	1	
32		32	1	CPB025WC	CPF9A20.met	RB19032.dat	1	
33		33	1	TXB005SB	CPF9A20.met	RB19033.dat	1	
34		34	1	B094-02	CPF9A20.met	RB19034.dat	1	
35		35	1	B094-03	CPF9A20.met	RB19035.dat	1	
36		36	1	B113-02	CPF9A20.met	RB19036.dat	1	
37		37	1	B113-03	CPF9A20.met	RB19037.dat	1	
38		38	1	IBF9A2057	CPF9A20.met	RB19038.dat	1	
39		39	1	CCPF9A2057	CPF9A20.met	RB19039.dat	1	
40		40	1	CTOF9A2057	TOF9A20.met	RB19040.dat	1	

not used; see re-run

not used; see re-run

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
PESTICIDES

SOP	Rev. #
☐ EMAX-608	2
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	4
☐ EMAX-3580	2
☐ EMAX-3620	2
☐ EMAX-3660	1
☐ EMAX-3665	2

Note: For samples, relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ECP-080
Preparation Batch: CPB025 W
Matrix: Water / TCLP EXTRACT
Micropipette ID: PE00-03 (1000 µl)
Micropipette ID:

STANDARDS	ID	Amount Added (ml)
Surrogate	SSIC-12-92-01	0.4
LCS/MS (Pest) ★	SSIC-12-91-01	0.5
LCS/MS (PCB) ▲	SSIC-14-78-01	0.5
LCS/MS		

Reagents	Lot # / ID
CH_2Cl_2	151090508
Hexane	55149
Acetone	
Na_2SO_4	SWIB-003-07-25
H_2SO_4	
TBA Reagent	
Silica Sand	—
Florisil & Eluting Solvent	—
Isopropyl Alcohol	SPIA-07-01-16
Reagent Water	RWIA-005-16-02
Residual Chlorine Strip	5190
pH strip	HC573149
Hexane/Acetone Soln. (50:50)	—
Filter Paper	9695028 A

Lab Sample ID	Sonicator #	Cell #	Concentrator #
CPB025 WB			37/6
-WL	★		37/6
-WC	★		37/6
CCB025 WL	▲		37/6
-WC	▲		37/6
B121-01			37/5
TXB005 SB			43/6
B094-02			43/5
B094-03			23/5
B102-01			43/5
-02			43/5
-02M	▲		43/5
-02S	▲		44/5
-03			64/6
B113-02			64/6
-03			64/6
B116-02			64/6
B500-01			64/6
-02			6/6

Tuning	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2	35	35
3	35	35
4	35	35
5	35/60	35/60
6	35/60	35/60
7		
8		

Test Thermometer = SVOC-T1

Prepared By: JM
Witnessed By: TW
Standard Added By: JM
Checked By: ML
Extract Received By: 2/18/16
Location: VE02-01A
Disposed By:
Disposed On:

TT2

FileID: CPB025W

EMAX LABORATORIES INC

EXTRACTION LOG FOR PESTICIDES/PCBs

PrepBatchID	LabSampleID	Aliquot	Unit	Ve (ml)	EA	EVe (ml)	PF	FlorisilCleanup EMAX-3620	SulfurCleanup EMAX-3660	[1]AcidCleanup EMAX-3665	Comments
16CPB025W01	CPB025WB	1000	ml	10	1000	10	1				
16CPB025W02	CPB025WL	1000	ml	10	1000	10	1				Pest
16CPB025W03	CPB025WC	1000	ml	10	1000	10	1				Pest
16CPB025W04	60B025WL	1000	ml	10	1000	10	1				PCB
16CPB025W05	60B025WC	1000	ml	10	1000	10	1				PCB
16CPB025W06	B121-01	1000	ml	10	1000	10	1				QC (SW1A-005-16-12)
16CPB025W07	TXB005SB	100	ml	10	1000	10	10				TCLP Extract
16CPB025W08	B094-02	100	ml	10	1000	10	10				TCLP Extract
16CPB025W09	B094-03	1010	ml	10	1000	10	0.99				milky light brown w/bubbl
16CPB025W10	B102-01	1050	ml	10	1000	10	0.95				yellow,PCB
16CPB025W11	B102-02	1000	ml	10	1000	10	1				PCB
16CPB025W12	B102-02M	930	ml	10	1000	10	1.08				PCB
16CPB025W13	B102-02S	970	ml	10	1000	10	1.03				PCB
16CPB025W14	B102-03	1060	ml	10	1000	10	0.94				PCB
16CPB025W15	B113-02	990	ml	10	1000	10	1.01				light yellow,PEST/PCB
16CPB025W16	B113-03	980	ml	10	1000	10	1.02				PEST,PCB
16CPB025W17	B116-02	990	ml	10	1000	10	1.01				PCB
16CPB025W18	B500-01	990	ml	10	1000	10	1.01				PCB
16CPB025W19	B500-02	1000	ml	10	1000	10	1				PCB

☑ ExtractionStarted @ 2/17/2016 12:45

Ve=ExtractVolume **EA**= ExpectedAliquot **EVe**=ExpectedExtractVolume **PF**=(EA/Aliquot)(Ve/EVe)

☑ Extraction Ended @ 2/18/2016 6:45

Prepared By: JMuert

Comment: [1]Acid cleanup is only for PCB anlaysis.

Checked By: ML

pH 5 - 9, Chlorine not detected.

Date 2/18/16

SOP EMAX-3520 Rev. 5

TTS

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	TCLPSoln	TCLPVol	Exrtract pH	Preservation	Comments
16TXB005S01	TXB005SB	0	g	2/16/16 14:34		2000		HNO_3	
16TXB005S02	A134-01	100	g	2/16/16 14:41	#1	2000	5.06	HNO_3	for Cr only
16TXB005S03	A134-02	100.03	g	2/16/16 14:43	#1	2000	5.05	HNO_3	for Cr, Pb
16TXB005S04	A134-03	100	g	2/16/16 14:46	#1	2000	5.26	HNO_3	for Pb only
16TXB005S05	A206-01	100	g	2/16/16 14:48	#1	2000	5.79	HNO_3	for Pb only
16TXB005S06	B094-02	100.01	g	2/16/16 14:50	#1	2000	5.08	HNO_3	for 8270, 8151, 8081, Metals, & Hg... (UNPRESERVED)
16TXB005S07	B498-01	90	g	2/16/16 14:53	#1	1800	4.84	HNO_3	7 elements + Hg

☑ DateTimeStarted 2/16/2016 17:30 ☑ Thermometer Reset on 2/16/2016 17:30 Balance ID: 10203192. Calibration check was verified prior to use.

☑ DateTimeEnded 2/17/2016 11:30 Note: Sample preserved with HNO_3 is for metals analysis. MS/MSD were spiked prio Prepared By: DFelic

Extract Location: Metals Received By: SP Checked By: ML

Comment: 02/17/16 Date 2/17/16

EMAX LABORATORIES, INC.

FileID: TXB005S

TCLP EXTRACTION LOG

Determination of TLCP Solution							Determination of TCLP Extract Filtration			Determination of % solids for aqueos phase			
LabSampleID	Phase(s)	Aliquot	Sample pH	HCl	pH	TCLPSolnReq'd	(ml)	(g)	Pressure	WtS(g)	WtF(g)	WtDFS(g)	% Solids
TXB0055B							100						
A134-01	1	5.01	8.54	3.5	1.45	#1	100	97.71	Vacuum				
A134-02	1	5	8.08	3.5	1.42	#1	100	98.59	Vacuum				
A134-03	1	5.02	8.17	3.5	1.47	#1	100	98.83	Vacuum				
A206-01	1	5	8.23	3.5	1.53	#1	100	98.56	Vacuum				
B094-02	1	5.01	8.83	3.5	1.46	#1	100	98.40	Vacuum				
B498-01	1	5.02	5.63	3.5	1.53	#1	100	97.36	Vacuum				

Calibration of pH Meter		InstrumentID:	96
BufferID	Value	Reading	DateTime
5W1-01-780	4	4.01	2/16/16 17:18
5W1-01-794	7	7	2/16/16 17:17
SW1A-005-12-24	CalVer 5	5.03	2/16/16 17:19
SW1-01-780	4	4.01	2/17/16 15:58
SW1-01-794	7	7	2/17/16 15:56
SW1A-005-12-24	CalVer 5	5.03	2/17/16 15:59
ID	Reagent	Desc	Expiration Date
SP1A-07-01-08	HCl	1N	04/01/17
SW1A-005-14-09	HNO_3	Conc	04/29/17
SP1B-08-54-04	TCLP Soln	#1	08/09/16
SP1B-08-56-02	TCLP Soln	#1	08/16/16
Rotary Agitator #	Criteria	rpm	DateTime
1	30 ± 2 rpm	30	2/16/16 17:20
	30 ± 2 rpm		
Thermostat Setting:	73 F /23 C	Thermometer ID:	122273404
TCLP Room Temperature	Criteria	Rdg	DateTime
Room Temp (°C) High	23 ± 2 °C	23.4	2/17/16 9:20
Room Temp (°C) Low	23 ± 2 °C	21.9	2/17/16 0:13
Pipette ID	PE00-01		
CONCENTRATOR (WATER BATH)			
Concentrator #	Temp Setting	Thermometer Rdg	Thermometer ID
5	50	50	SVOC-T1
Filter ID/Lot #	103013/062513		
pH strip Lot#	HC554612		

Legend:

WtS = weight of sample

WtF = weight of filter

WtDFS = weight of dried filter + solids

Prepared By: DFelic

Checked By: ML

Date 2/17/16

HERBICIDES

METHOD 8151A
HERBICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/22/16 13:32
Lab Samp ID:	B094-03	Dilution Factor:	10
Lab File ID:	WB19019A	Matrix :	WATER
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19017A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	4.0	1.0	2.0
2,4,5-TP (SILVEX)	(ND)|ND	4.0	1.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	5.505|(6.189)	10.00	55.1|(61.9)	50-130

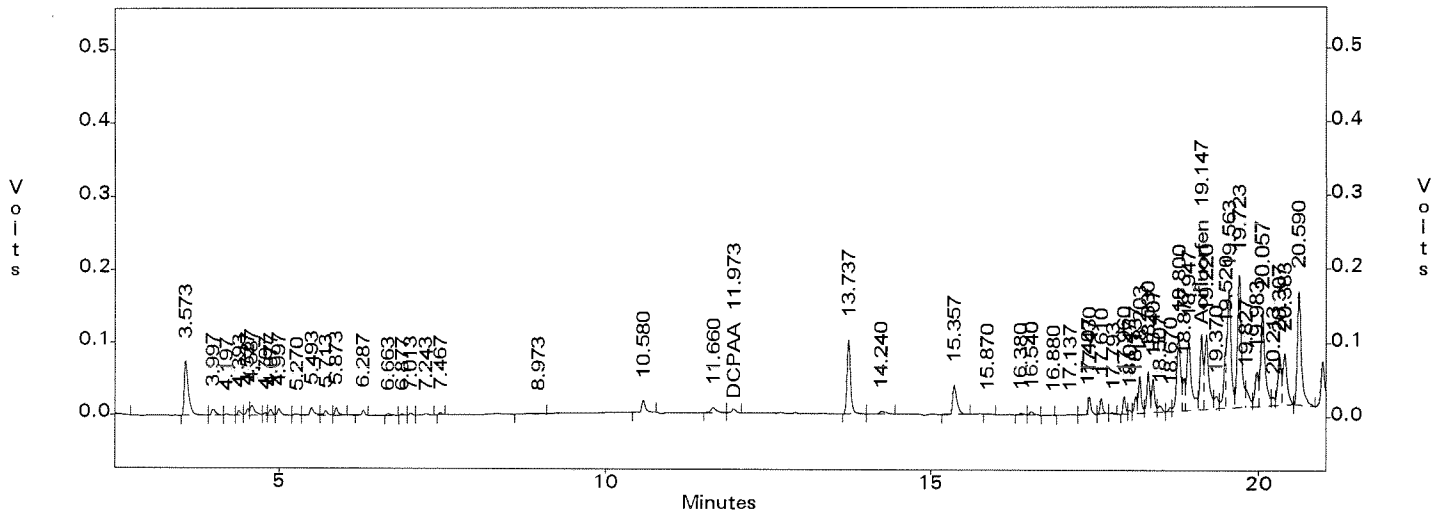
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.019
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : B094-03J DF=10
Acquired : Feb 22, 2016 13:32:19
Printed : Feb 22, 2016 14:11:48
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.067	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	10.333	0.0	0.00	0.000	--
4-Nitrophenol	11.220	0.0	0.00	0.000	--
DCPAA	11.973	21079.0	382.88	550.544	VB
Dicamba	12.140	0.0	0.00	0.000	--
MCPP	12.227	0.0	0.00	0.000	--
MCPA	12.733	0.0	0.00	0.000	--
DCP	13.090	0.0	0.00	0.000	--
2,4-D	13.657	0.0	0.00	0.000	--
Pentachlorophenol	14.373	0.0	0.00	0.000	--
Silvex	14.523	0.0	0.00	0.000	--
2,4,5-T	15.167	0.0	0.00	0.000	--
Chloramben	15.430	0.0	0.00	0.000	--
Dinoseb	15.583	0.0	0.00	0.000	--
2,4-DB	15.757	0.0	0.00	0.000	--
Bentazon	16.667	0.0	0.00	0.000	--
Dacthal	16.940	0.0	0.00	0.000	--
Picloram	17.463	0.0	0.00	0.000	--
Acifluorfen	19.147	325960.0	1107.39	2943.511	VV

c:\ezchrom\chrom\wb19\wb19.019 -- Channel A



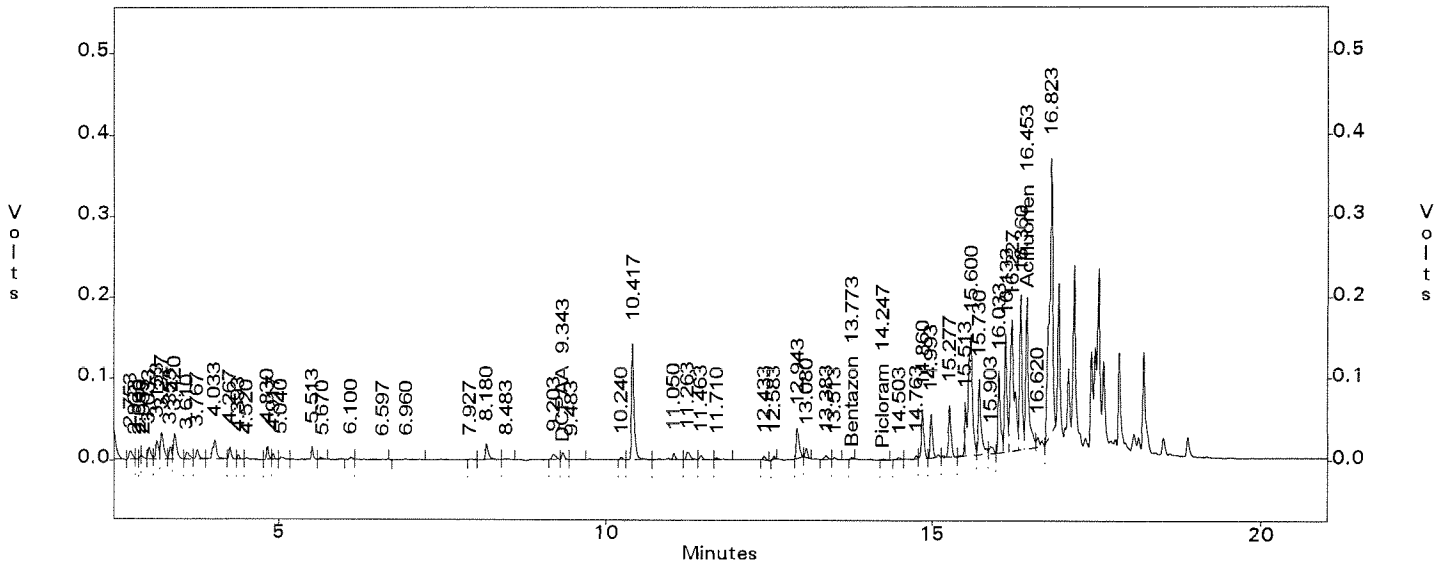
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.019
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : B094-03J DF=10
Acquired : Feb 22, 2016 13:32:19
Printed : Feb 22, 2016 14:11:48
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	7.870	0.0	0.00	0.000	--
4-Nitrophenol	8.667	0.0	0.00	0.000	--
DCPAA	9.343	23861.0	385.54	618.906	VV
Dicamba	9.577	0.0	0.00	0.000	--
MCPP	9.757	0.0	0.00	0.000	--
MCPA	10.060	0.0	0.00	0.000	--
DCP	10.493	0.0	0.00	0.000	--
2,4-D	10.887	0.0	0.00	0.000	--
Pentachlorophenol	11.343	0.0	0.00	0.000	--
Silvex	11.843	0.0	0.00	0.000	--
2,4,5-T	12.293	0.0	0.00	0.000	--
Chloramben	12.307	0.0	0.00	0.000	--
2,4-DB	12.857	0.0	0.00	0.000	--
Dinoseb	13.200	0.0	0.00	0.000	--
Bentazon	13.773	5700.0	305.54	186.558	vv
Dacthal	14.180	0.0	0.00	0.000	--
Picloram	14.247	7353.0	3490.13	21.068	xV
Acifluorfen	16.453	574954.0	1644.22	3496.814	VS

c:\ezchrom\chrom\wb19\wb19.019 -- Channel B



QC SUMMARIES

METHOD 8151A
HERBICIDES

Client : URS CORPORATION	Date Collected: NA
Project : CANNON AFB PBR	Date Received: 02/17/16
Batch No. : 16B094	Date Extracted: 02/17/16 13:59
Sample ID: MBLK1W	Date Analyzed: 02/22/16 12:58
Lab Samp ID: HEB007WB	Dilution Factor: 1
Lab File ID: WB19018A	Matrix : WATER
Ext Btch ID: HEB007W	% Moisture : NA
Calib. Ref.: WB19017A	Instrument ID : GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	0.40	0.10	0.20
2,4,5-TP (SILVEX)	(ND)|ND	0.40	0.10	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	10.31|(10.52)	10.00	103|(105)	50-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: 8151A

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HEB007WB	HEB007WL	HEB007WC		
LAB FILE ID:	WB19018A	WB19012A	WB19005A		
DATE EXTRACTED:	02/17/1613:59	02/17/1613:59	02/17/1613:59	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1612:58	02/19/1619:44	02/19/1615:47	DATE RECEIVED:	02/17/16
PREP. BATCH:	HEB007W	HEB007W	HEB007W		
CALIB. REF:	WB19017A	WB19002A	WB19002A		

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 (%)
2,4-D	(ND)|ND	1.00	(1.00)|0.957	(100)|96	1.00	(0.982)|0.933	(98)|93	(2)|3	35-115	30
2,4,5-TP (Silvex)	(ND)|ND	1.00	0.979|(1.04)	98|(104)	1.00	0.948|(1.02)	95|(102)	3|(2)	50-115	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 (%)
2,4-DCPAA	10.00	9.926|(9.941)	99.3|(99.4)	10.00	(9.701)|9.690	(97.0)|96.9	50-130

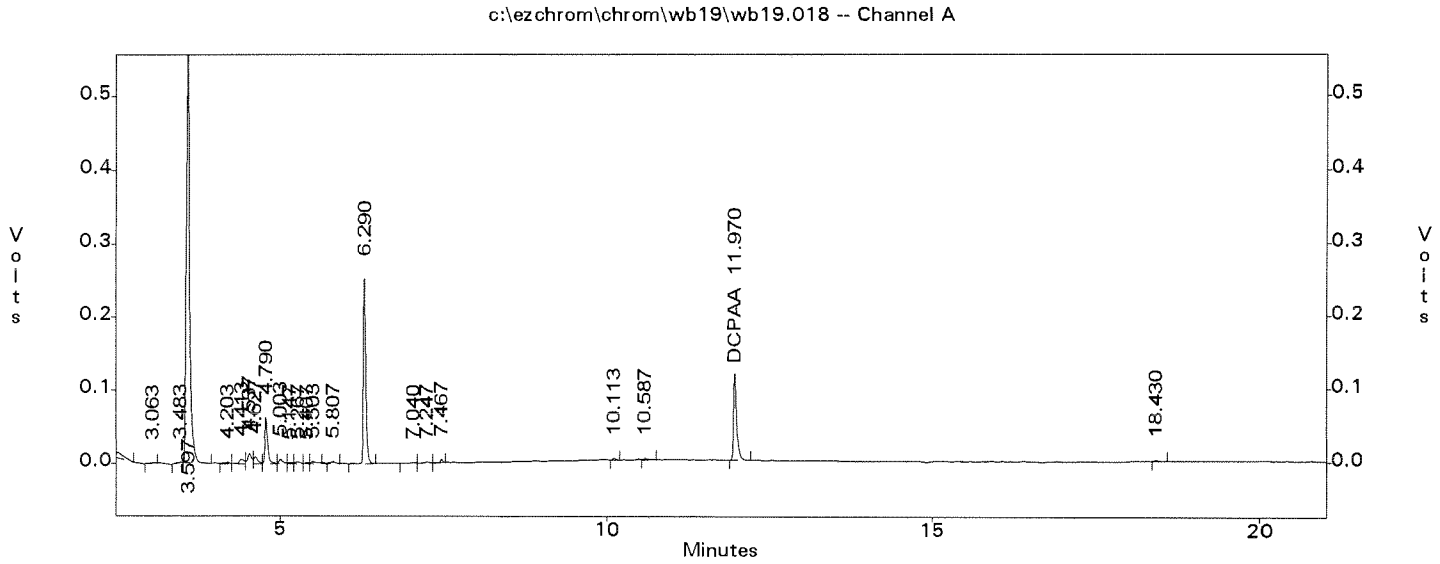
QC DATA

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.018
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : HEB007WB
Acquired : Feb 22, 2016 12:58:24
Printed : Feb 22, 2016 14:09:05
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.067	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	10.333	0.0	0.00	0.000	--
4-Nitrophenol	11.220	0.0	0.00	0.000	--
DCPAA	11.970	394788.0	382.88	1031.113	Bx
Dicamba	12.140	0.0	0.00	0.000	--
MCPP	12.227	0.0	0.00	0.000	--
MCPA	12.733	0.0	0.00	0.000	--
DCP	13.090	0.0	0.00	0.000	--
2,4-D	13.657	0.0	0.00	0.000	--
Pentachlorophenol	14.373	0.0	0.00	0.000	--
Silvex	14.523	0.0	0.00	0.000	--
2,4,5-T	15.167	0.0	0.00	0.000	--
Chloramben	15.430	0.0	0.00	0.000	--
Dinoseb	15.583	0.0	0.00	0.000	--
2,4-DB	15.757	0.0	0.00	0.000	--
Bentazon	16.667	0.0	0.00	0.000	--
Dacthal	16.940	0.0	0.00	0.000	--
Picloram	17.463	0.0	0.00	0.000	--
Acifluorfen	19.157	0.0	0.00	0.000	--



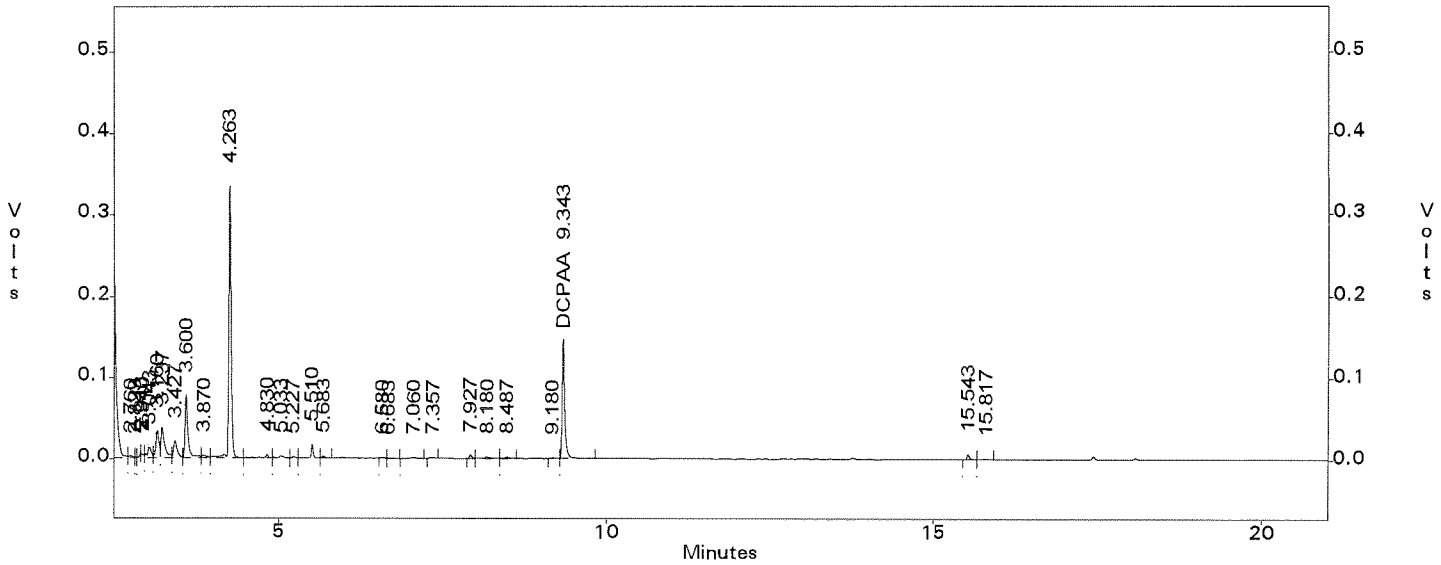
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.018
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WB
Acquired : Feb 22, 2016 12:58:24
Printed : Feb 22, 2016 14:09:05
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	7.870	0.0	0.00	0.000	--
4-Nitrophenol	8.667	0.0	0.00	0.000	--
DCPAA	9.343	405562.0	385.54	1051.946	VV
Dicamba	9.577	0.0	0.00	0.000	--
MCPP	9.757	0.0	0.00	0.000	--
MCPA	10.060	0.0	0.00	0.000	--
DCP	10.493	0.0	0.00	0.000	--
2,4-D	10.887	0.0	0.00	0.000	--
Pentachlorophenol	11.343	0.0	0.00	0.000	--
Silvex	11.843	0.0	0.00	0.000	--
2,4,5-T	12.293	0.0	0.00	0.000	--
Chloramben	12.307	0.0	0.00	0.000	--
2,4-DB	12.857	0.0	0.00	0.000	--
Dinoseb	13.200	0.0	0.00	0.000	--
Bentazon	13.763	0.0	0.00	0.000	--
Dacthal	14.180	0.0	0.00	0.000	--
Picloram	14.230	0.0	0.00	0.000	--
Acifluorfen	16.453	0.0	0.00	0.000	--

c:\ezchrom\chrom\wb19\wb19.018 -- Channel B



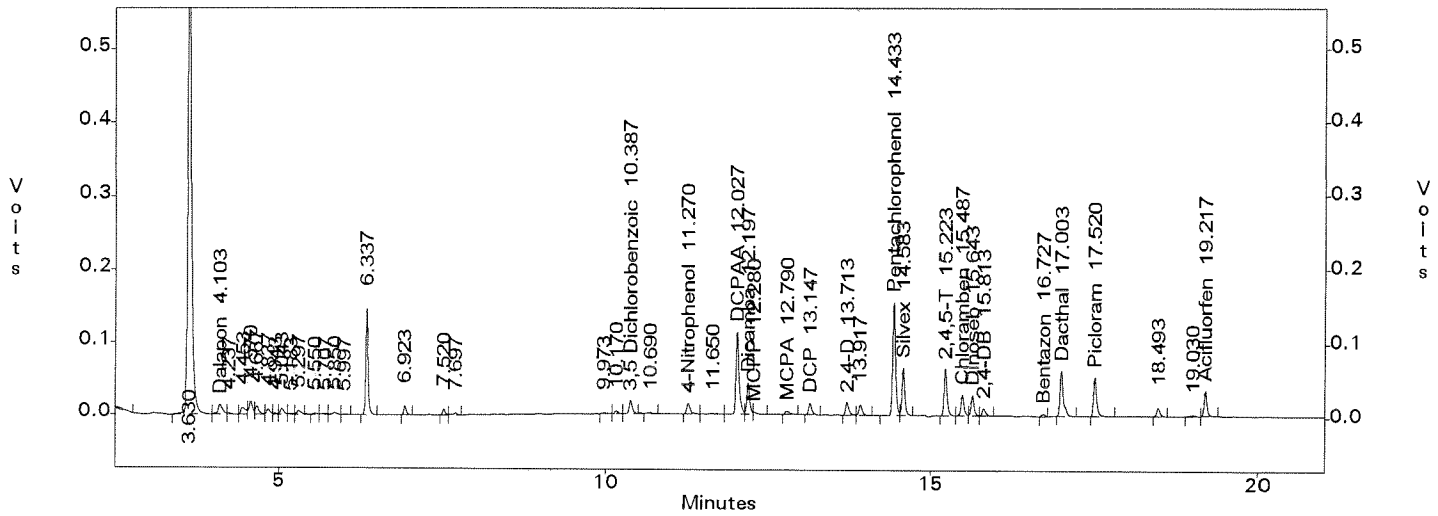
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.012
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : HEB007WL
Acquired : Feb 19, 2016 19:44:05
Printed : Feb 22, 2016 09:15:42
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	59846.0	643.80	92.958	VV
3,5 Dichlorobenzoic	10.387	59541.0	677.65	87.864	VV
4-Nitrophenol	11.270	52548.0	308.97	170.075	BV
DCPAA	12.027	380030.0	382.88	992.568	VV
Dicamba	12.197	130037.0	1344.60	96.710	Vx
MCPP	12.280	10783.0	2.16	4990.695	xV
MCPA	12.790	23137.0	5.07	4559.737	BV
DCP	13.147	51052.0	508.17	100.463	vv
2,4-D	13.713	60135.0	598.69	100.445	VV
Pentachlorophenol	14.433	483799.0	4844.71	99.861	VV
Silvex	14.583	191601.0	1957.30	97.890	VV
2,4,5-T	15.223	200838.0	2001.68	100.335	BV
Chloramben	15.487	90738.0	1388.68	65.341	VV
Dinoseb	15.643	85655.0	1048.62	81.684	VV
2,4-DB	15.813	33255.0	340.05	97.795	VV
Bentazon	16.727	9918.0	217.11	45.682	BV
Dacthal	17.003	215912.0	2312.00	93.387	VV
Picloram	17.520	173992.0	2085.24	83.440	BV
Acifluorfen	19.217	103143.0	1107.39	93.141	vv

c:\ezchrom\chrom\wb19\wb19.012 -- Channel A

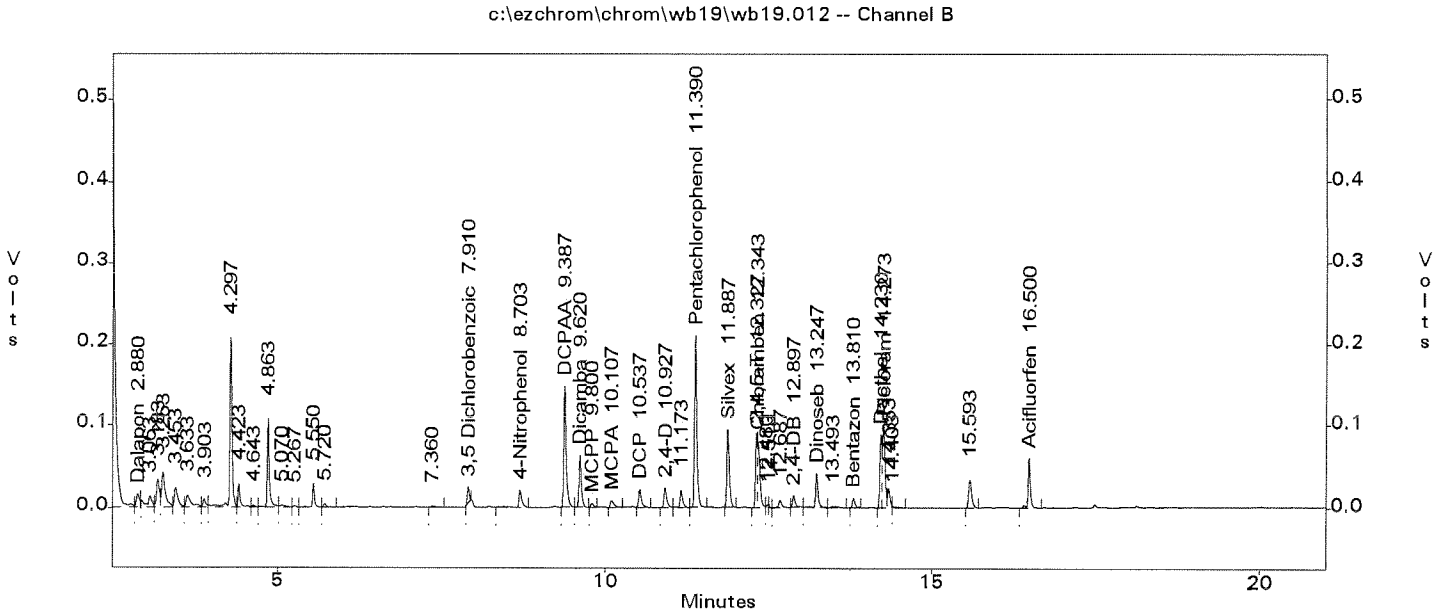


EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.012
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WL
Acquired : Feb 19, 2016 19:44:05
Printed : Feb 22, 2016 09:15:42
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.880	54360.0	618.45	87.897	VS
3,5 Dichlorobenzoic	7.910	41350.0	757.07	54.618	BS
4-Nitrophenol	8.703	70610.0	430.56	163.997	VV
DCPAA	9.387	383261.0	385.54	994.101	BV
Dicamba	9.620	155507.0	1561.07	99.616	VV
MCPP	9.800	13676.0	2.52	5417.349	vv
MCPA	10.107	27958.0	5.09	5495.013	BV
DCP	10.537	59385.0	564.08	105.278	BI
2,4-D	10.927	67632.0	706.46	95.734	BV
Pentachlorophenol	11.390	538847.0	5597.35	96.268	VV
Silvex	11.887	240913.0	2321.63	103.769	vv
2,4,5-T	12.327	178768.0	1649.51	108.376	Bx
Chloramben	12.343	194290.0	2615.99	74.270	xS
2,4-DB	12.897	39432.0	401.89	98.115	vv
Dinoseb	13.247	101727.0	1494.07	68.087	VV
Bentazon	13.810	28312.0	305.54	92.663	BI
Dacthal	14.230	165955.0	2450.60	67.720	Bx
Picloram	14.273	294954.0	3490.13	84.511	xS
Acifluorfen	16.500	136186.0	1644.22	82.827	BV



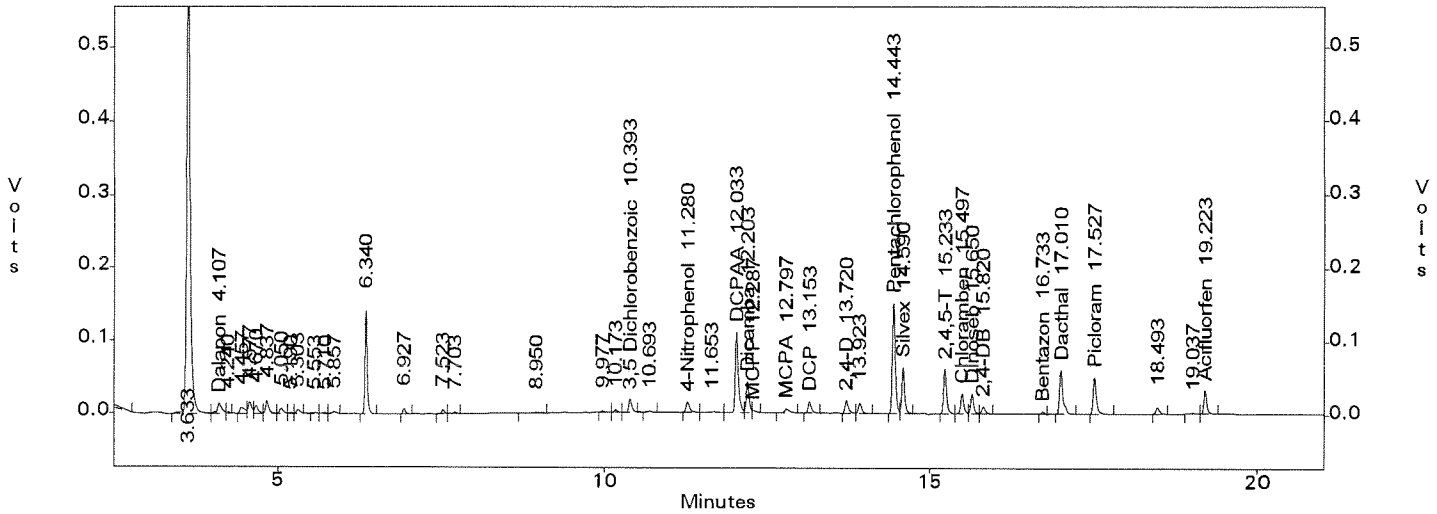
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.005
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : HEB007WC
Acquired : Feb 19, 2016 15:47:04
Printed : Feb 22, 2016 10:17:03
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.107	58731.0	643.80	91.226	VV
3,5 Dichlorobenzoic	10.393	58394.0	677.65	86.171	VV
4-Nitrophenol	11.280	51103.0	308.97	165.398	BV
DCPAA	12.033	371421.0	382.88	970.083	VV
Dicamba	12.203	124711.0	1344.60	92.749	Vx
MCPP	12.287	10789.0	2.16	4993.472	xx
MCPA	12.797	22837.0	5.07	4500.614	VV
DCP	13.153	50659.0	508.17	99.690	vv
2,4-D	13.720	58808.0	598.69	98.228	VV
Pentachlorophenol	14.443	469784.0	4844.71	96.968	BV
Silvex	14.590	185568.0	1957.30	94.808	VV
2,4,5-T	15.233	192333.0	2001.68	96.086	BV
Chloramben	15.497	88711.0	1388.68	63.881	VV
Dinoseb	15.650	82792.0	1048.62	78.953	VV
2,4-DB	15.820	32294.0	340.05	94.969	VV
Bentazon	16.733	9308.0	217.11	42.872	BV
Dacthal	17.010	206396.0	2312.00	89.272	VV
Picloram	17.527	165120.0	2085.24	79.185	BV
Acifluorfen	19.223	96734.0	1107.39	87.354	vv

c:\ezchrom\chrom\wb19\wb19.005 -- Channel A



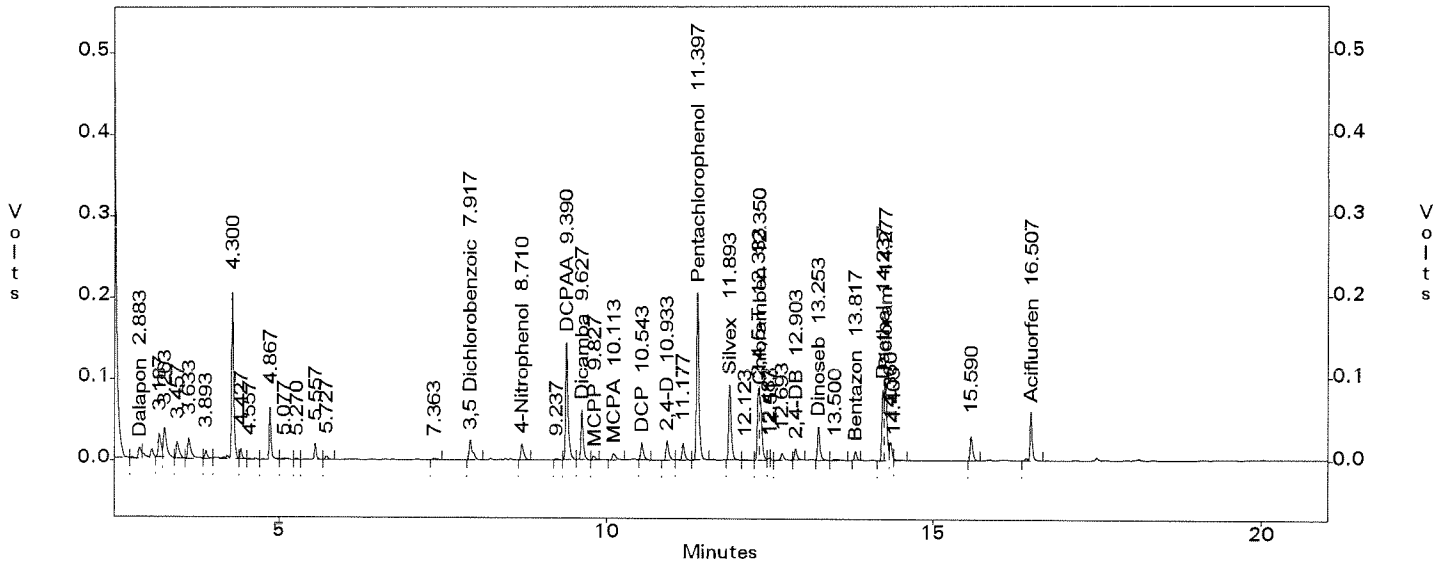
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.005
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WC
Acquired : Feb 19, 2016 15:47:04
Printed : Feb 22, 2016 10:17:03
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.883	42132.0	618.45	68.125	HH
3,5 Dichlorobenzoic	7.917	80105.0	757.07	105.809	BV
4-Nitrophenol	8.710	59166.0	430.56	137.417	BV
DCPAA	9.390	373603.0	385.54	969.050	VV
Dicamba	9.627	150773.0	1561.07	96.583	VV
MCPP	9.827	13245.0	2.52	5246.621	vv
MCPA	10.113	26157.0	5.09	5141.035	xV
DCP	10.543	56713.0	564.08	100.541	BI
2,4-D	10.933	65919.0	706.46	93.309	BV
Pentachlorophenol	11.397	526062.0	5597.35	93.984	VI
Silvex	11.893	236354.0	2321.63	101.805	vv
2,4,5-T	12.333	176177.0	1649.51	106.805	xx
Chloramben	12.350	191146.0	2615.99	73.068	xS
2,4-DB	12.903	38265.0	401.89	95.212	vv
Dinoseb	13.253	99710.0	1494.07	66.737	BV
Bentazon	13.817	26593.0	305.54	87.037	vv
Dacthal	14.237	172371.0	2450.60	70.338	Bx
Picloram	14.277	270931.0	3490.13	77.628	xS
Acifluorfen	16.507	135380.0	1644.22	82.337	BV

c:\ezchrom\chrom\wb19\wb19.005 -- Channel B



INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
LFID & Datetime: WL17009A 12/17/15 14:27
LFID & Datetime: WL17008A 12/17/15 13:59
LFID & Datetime: WL17007A 12/17/15 13:31
LFID & Datetime: WL17006A 12/17/15 13:04
LFID & Datetime: WL17005A 12/17/15 12:36
LFID & Datetime: WL17004A 12/17/15 12:08
LFID & Datetime: WL17003A 12/17/15 11:41
LFID & Datetime: WL17002A 12/17/15 11:13
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
Dalapon	9.10	0	554	689	641	658	641	672	652	643.8	6.7
3,5-Dichlorobenzo	9.31	0	654	735	677	689	681	662	645	677.7	4.4
4-Nitrophenol	9.09	0	285	337	311	316	315	299	300	309.0	5.3
Dicamba	9.40	0	1161	1402	1337	1391	1395	1373	1354	1344.6	6.3
MCPP	469.30	0	0	1.94	2.01	2.33	2.18	2.19	2.30	2.16	7.1
MCPA	467.30	0	0	6.35	5.16	5.09	4.91	4.42	4.52	5.07	13.6
Dichloroprop	9.44	0	485	549	507	516	511	493	497	508.2	4.1
2,4-D	9.40	0	573	664	602	609	595	582	567	598.7	5.4
Pentachlorophenol	9.50	3804	3827	5026	4975	5305	5337	5285	5200	4844.7	13.4
2,4,5-TP(Silvex)	9.50	0	1537	1932	1889	2055	2092	2103	2092	1957.3	10.4
Chloramben	9.36	0	1129	1368	1325	1439	1468	1496	1496	1388.7	9.5
2,4,5-T	9.48	0	1636	2014	1960	2092	2116	2109	2084	2001.7	8.5
2,4-DB	9.47	0	345	370	336	338	333	333	324	340.0	4.4
Dinoseb	9.45	0	1011	1144	1034	1064	1047	1036	1004	1048.6	4.5
Bentazon	9.45	0	188	218	210	224	226	229	226	217.1	6.6
Dacthal	9.15	0	1757	2209	2229	2450	2496	2524	2520	2312.0	12.1
Picloram	9.45	0	1462	1978	2003	2247	2260	2319	2327	2085.2	14.9
Acifluorfen	9.63	0	986	1212	1068	1153	1141	1127	1064	1107.4	6.7
SURROGATE	X	1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
2,4-DCPAA	93.58	0	415	439	387	381	367	353	338	382.9	9.1

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INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
LFID & Datetime: WL17009B 12/17/15 14:27
LFID & Datetime: WL17008B 12/17/15 13:59
LFID & Datetime: WL17007B 12/17/15 13:31
LFID & Datetime: WL17006B 12/17/15 13:04
LFID & Datetime: WL17005B 12/17/15 12:36
LFID & Datetime: WL17004B 12/17/15 12:08
LFID & Datetime: WL17003B 12/17/15 11:41
LFID & Datetime: WL17002B 12/17/15 11:13
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
Dalapon	9.10	0	513	584	685	656	639	646	607	618.4	9.2
3,5-Dichlorobenzo	9.31	0	837	879	769	752	720	689	653	757.1	10.6
4-Nitrophenol	9.09	0	500	516	440	425	400	378	356	430.6	13.9
Dicamba	9.40	0	1607	1739	1569	1572	1531	1484	1425	1561.1	6.4
MCPP	469.30	0	0	2.54	2.53	2.60	2.56	2.49	2.43	2.52	2.3
MCPA	467.30	0	0	6.22	5.57	5.19	4.81	4.51	4.22	5.09	14.5
Dichloroprop	9.44	0	620	650	572	561	538	516	492	564.1	9.9
2,4-D	9.40	0	766	804	711	702	681	653	628	706.5	8.7
Pentachlorophenol	9.50	5946	5593	6236	5613	5604	5436	5273	5077	5597.4	6.5
2,4,5-TP(Silvex)	9.50	0	2166	2553	2358	2388	2329	2271	2187	2321.6	5.7
Chloramben	9.36	0	2409	2712	2581	2722	2738	2592	2557	2616.0	4.5
2,4,5-T	9.48	0	1559	1991	1771	1675	1542	1563	1446	1649.5	11.1
2,4-DB	9.47	0	411	457	405	404	392	380	365	401.9	7.2
Dinoseb	9.45	0	1532	1687	1505	1512	1462	1405	1355	1494.1	7.1
Bentazon	9.45	0	300	338	305	306	303	297	290	305.5	5.0
Dacthal	9.15	0	2544	2741	2544	2468	2465	2279	2114	2450.6	8.2
Picloram	9.45	0	2639	3642	3481	3754	3628	3660	3628	3490.1	11.0
Acifluorfen	9.63	0	1503	1764	1603	1697	1682	1651	1610	1644.2	5.1

SURROGATE	X	1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
2,4-DCPAA	93.58	0	453	449	386	375	360	346	331	385.5	12.5

pu 12/30/15

TSZ

INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
LFID & Datetime: WL17009A 12/17/15 14:27
LFID & Datetime: WL17008A 12/17/15 13:59
LFID & Datetime: WL17007A 12/17/15 13:31
LFID & Datetime: WL17006A 12/17/15 13:04
LFID & Datetime: WL17005A 12/17/15 12:36
LFID & Datetime: WL17004A 12/17/15 12:08
LFID & Datetime: WL17003A 12/17/15 11:41
LFID & Datetime: WL17002A 12/17/15 11:13

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	7.0X	10.0X	13.0X	16.0X	20.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Dalapon	4.103	4.103	4.103	4.110	4.107	4.110	4.113	4.117	4.109	4.093	4.125	0.016
3,5-Dichlorobenzo	10.393	10.393	10.393	10.397	10.400	10.407	10.410	10.413	10.402	10.381	10.423	0.021
4-Nitrophenol	11.280	11.280	11.280	11.283	11.287	11.293	11.297	11.300	11.289	11.269	11.309	0.020
Dicamba	12.203	12.203	12.207	12.210	12.213	12.220	12.220	12.227	12.214	12.191	12.237	0.023
MCPP	0.000	0.000	12.293	12.297	12.300	12.303	12.307	12.313	12.302	12.279	12.325	0.023
MCPA	12.803	12.803	12.803	12.803	12.807	12.813	12.813	12.820	12.810	12.788	12.832	0.022
Dichloroprop	13.153	13.157	13.157	13.160	13.163	13.170	13.170	13.177	13.165	13.143	13.187	0.022
2,4-D	13.723	13.723	13.723	13.727	13.730	13.737	13.737	13.743	13.731	13.704	13.758	0.027
Pentachlorophenol	14.443	14.443	14.447	14.450	14.453	14.460	14.463	14.470	14.454	14.427	14.481	0.027
2,4,5-TP(Silvex)	14.590	14.593	14.593	14.597	14.600	14.607	14.610	14.613	14.602	14.581	14.623	0.021
Chloramben	15.497	15.500	15.500	15.503	15.507	15.513	15.517	15.520	15.509	15.487	15.531	0.022
2,4,5-T	15.237	15.237	15.237	15.240	15.243	15.250	15.253	15.257	15.245	15.223	15.267	0.022
2,4-DB	15.827	15.827	15.827	15.830	15.833	15.840	15.843	15.847	15.835	15.814	15.856	0.021
Dinoseb	15.653	15.653	15.657	15.660	15.663	15.670	15.670	15.677	15.664	15.643	15.685	0.021
Bentazon	0.000	16.740	16.740	16.743	16.750	16.757	16.760	16.763	16.750	16.729	16.771	0.021
Dacthal	17.010	17.013	17.013	17.017	17.020	17.030	17.033	17.037	17.023	17.002	17.044	0.021
Picloram	17.533	17.533	17.533	17.537	17.540	17.547	17.550	17.557	17.542	17.521	17.563	0.021
Acifluorfen	19.227	19.230	19.230	19.233	19.237	19.247	19.247	19.253	19.240	19.219	19.261	0.021

SURROGATE	1.0X	2.0X	4.0X	7.0X	10.0X	13.0X	16.0X	20.0X	RT	FROM	TO	WIDTH
2,4-DCPAA	12.037	12.037	12.037	12.037	12.043	12.047	12.050	12.057	12.044	12.021	12.067	0.023

12/30/15

INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
LFID & Datetime: WL17009B 12/17/15 14:27
LFID & Datetime: WL17008B 12/17/15 13:59
LFID & Datetime: WL17007B 12/17/15 13:31
LFID & Datetime: WL17006B 12/17/15 13:04
LFID & Datetime: WL17005B 12/17/15 12:36
LFID & Datetime: WL17004B 12/17/15 12:08
LFID & Datetime: WL17003B 12/17/15 11:41
LFID & Datetime: WL17002B 12/17/15 11:13

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	7.0X	10.0X	13.0X	16.0X	20.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Dalapon	2.913	2.893	2.890	2.893	2.893	2.897	2.897	2.900	2.895	2.879	2.911	0.016
3,5-Dichlorobenzo	7.933	7.933	7.933	7.933	7.937	7.940	7.943	7.947	7.938	7.917	7.959	0.021
4-Nitrophenol	8.737	8.733	8.730	8.733	8.733	8.737	8.740	8.743	8.736	8.705	8.767	0.031
Dicamba	9.643	9.643	9.643	9.647	9.647	9.653	9.653	9.660	9.649	9.625	9.673	0.024
MCPP	0.000	0.000	9.820	9.823	9.827	9.830	9.833	9.840	9.829	9.808	9.850	0.021
MCPA	10.133	10.130	10.130	10.130	10.133	10.137	10.140	10.143	10.136	10.112	10.160	0.024
Dichloroprop	10.563	10.563	10.560	10.563	10.567	10.570	10.573	10.577	10.568	10.542	10.594	0.026
2,4-D	10.957	10.953	10.953	10.953	10.953	10.960	10.960	10.963	10.956	10.934	10.978	0.022
Pentachlorophenol	11.413	11.413	11.413	11.417	11.420	11.423	11.427	11.433	11.420	11.396	11.444	0.024
2,4,5-TP(Silvex)	11.913	11.913	11.913	11.913	11.917	11.923	11.923	11.930	11.919	11.895	11.943	0.024
Chloramben	12.380	12.380	12.380	12.380	12.383	12.390	12.393	12.397	12.386	12.360	12.412	0.026
2,4,5-T	0.000	12.360	12.357	12.357	12.360	12.363	12.367	12.370	12.362	12.338	12.386	0.024
2,4-DB	12.933	12.933	12.930	12.930	12.930	12.933	12.937	12.940	12.933	12.907	12.959	0.026
Dinoseb	13.273	13.273	13.273	13.277	13.280	13.283	13.287	13.293	13.281	13.257	13.305	0.024
Bentazon	13.840	13.840	13.840	13.843	13.843	13.850	13.853	13.857	13.847	13.820	13.874	0.027
Dacthal	14.257	14.257	14.257	14.260	14.263	14.267	14.270	14.277	14.264	14.237	14.291	0.027
Picloram	14.310	14.310	14.307	14.307	14.307	14.313	14.313	14.320	14.311	14.285	14.337	0.026
Acifluorfen	16.530	16.533	16.530	16.533	16.537	16.543	16.547	16.550	16.539	16.515	16.563	0.024
SURROGATE	**1.0X**	**2.0X**	**4.0X**	**7.0X**	**10.0X**	**13.0X**	**16.0X**	**20.0X**	**RT**	**FROM**	**TO**	**WIDTH**
2,4-DCPAA	9.410	9.410	9.407	9.410	9.413	9.417	9.420	9.423	9.414	9.390	9.438	0.024

Rev 12/30/15

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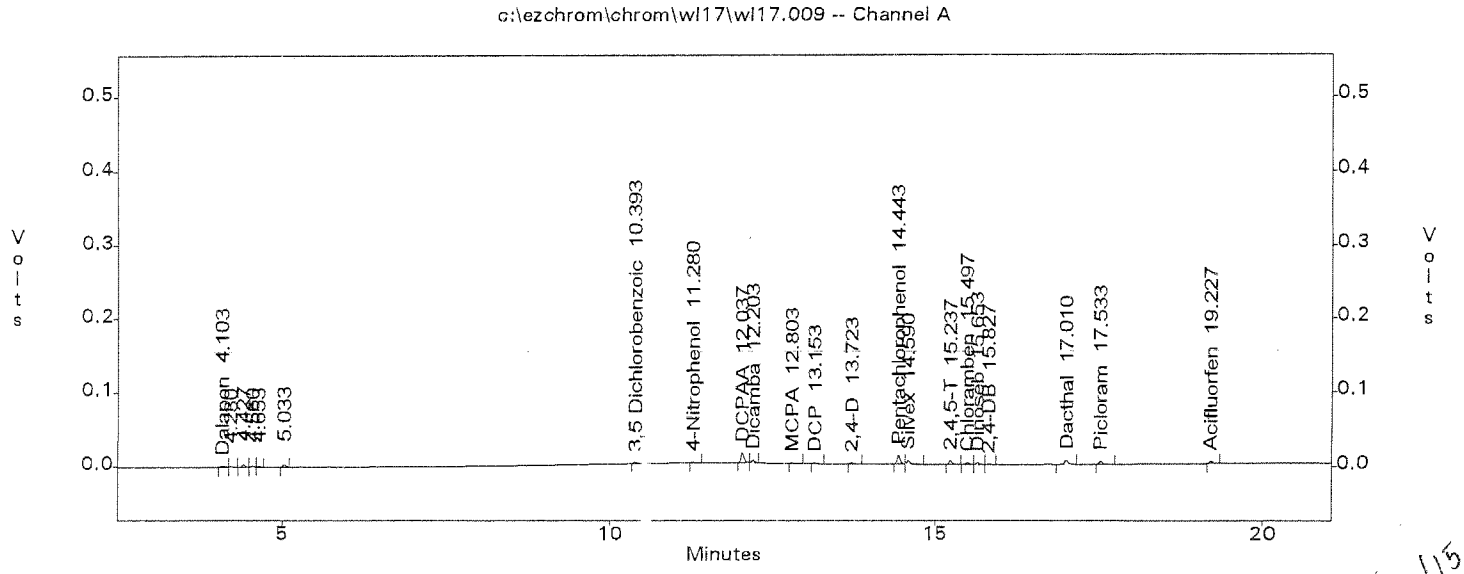
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.009
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L171
Acquired : Dec 17, 2015 14:27:03
Printed : Dec 17, 2015 18:30:32
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	5453.0	643.80	-1.000	BV
3,5 Dichlorobenzoic	10.393	6537.0	677.65	-1.000	BV
4-Nitrophenol	11.280	2780.0	308.97	-1.000	BV
DCPAA	12.037	44436.0	382.88	-1.000	BV
Dicamba	12.203	12361.0	1344.60	-1.000	VV
MCPP	12.300	0.0	0.00	0.000	--
MCPA	12.803	3943.0	5.07	-1.000	BB
DCP	13.153	4842.0	508.17	-1.000	BB
2,4-D	13.723	5761.0	598.69	-1.000	BB
Pentachlorophenol	14.443	36120.0	4844.71	9.496	BV
Silvex	14.590	15669.0	1957.30	-1.000	VB
2,4,5-T	15.237	16184.0	2001.68	-1.000	BV
Chloramben	15.497	10829.0	1388.68	-1.000	VV
Dinoseb	15.653	9995.0	1048.62	-1.000	VV
2,4-DB	15.827	2891.0	340.05	-1.000	VV
Bentazon	16.750	0.0	0.00	0.000	--
Dacthal	17.010	16960.0	2312.00	-1.000	VB
Picloram	17.533	15356.0	2085.24	-1.000	BV
Acifluorfen	19.227	10773.0	1107.39	-1.000	BV



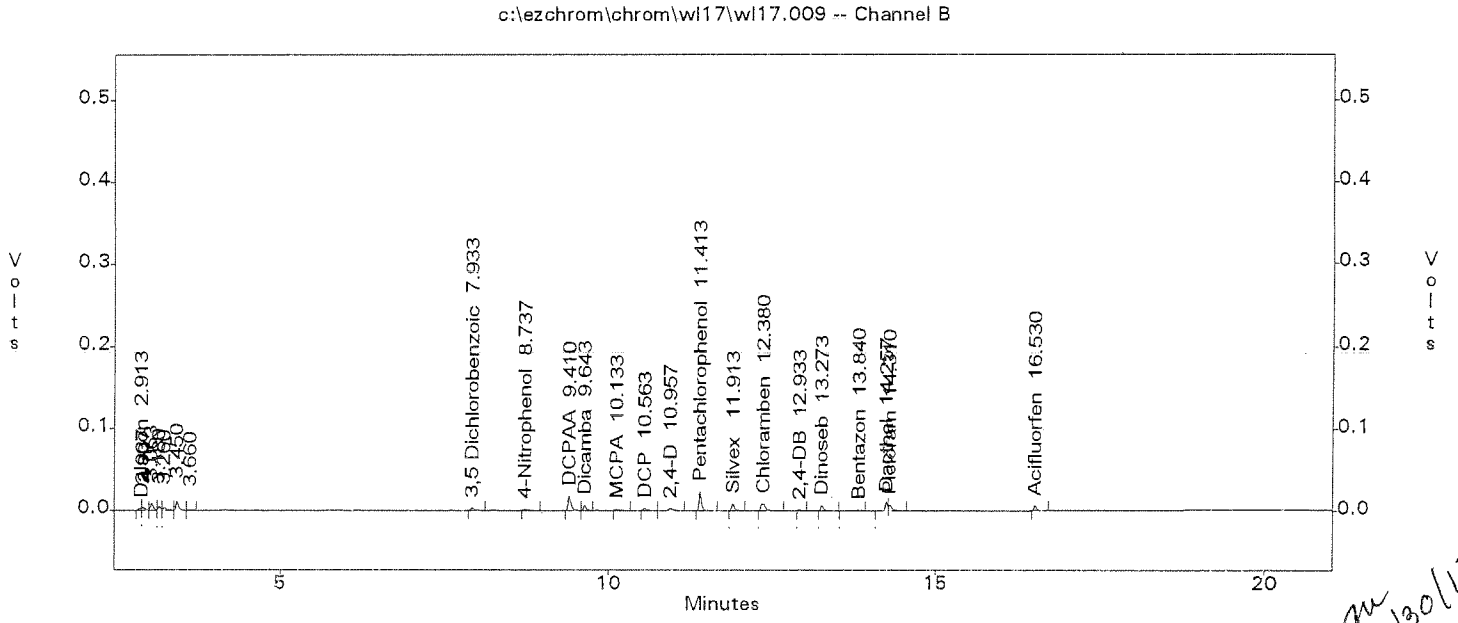
12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.009
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L171
Acquired : Dec 17, 2015 14:27:03
Printed : Dec 17, 2015 18:30:32
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.913	5493.0	618.45	-1.000	Bx
3,5 Dichlorobenzoic	7.933	8784.0	757.07	-1.000	BB
4-Nitrophenol	8.737	5165.0	430.56	-1.000	BB
DCPAA	9.410	50285.0	385.54	-1.000	BV
Dicamba	9.643	16173.0	1561.07	-1.000	VB
MCPP	9.823	0.0	0.00	0.000	--
MCPA	10.133	3989.0	5.09	-1.000	BB
DCP	10.563	6647.0	564.08	-1.000	BV
2,4-D	10.957	8157.0	706.46	-1.000	VV
Pentachlorophenol	11.413	56465.0	5597.35	9.496	BB
Silvex	11.913	21436.0	2321.63	-1.000	BV
2,4,5-T	12.363	0.0	0.00	0.000	--
Chloramben	12.380	38478.0	2615.99	-1.000	BV
2,4-DB	12.933	3523.0	401.89	-1.000	BB
Dinoseb	13.273	16215.0	1494.07	-1.000	BV
Bentazon	13.840	3661.0	305.54	-1.000	Vx
Dacthal	14.257	23182.0	2450.60	-1.000	VS
Picloram	14.310	25844.0	3490.13	-1.000	SB
Acifluorfen	16.530	15821.0	1644.22	-1.000	BV



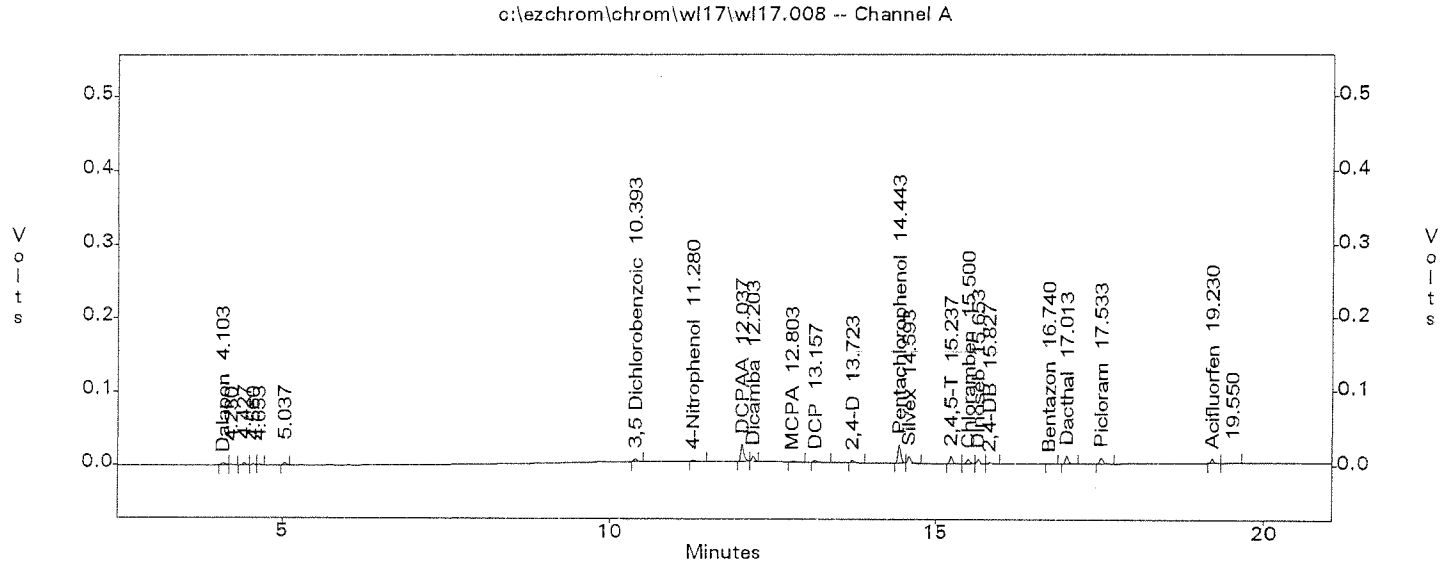
12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.008
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L172
Acquired : Dec 17, 2015 13:59:25
Printed : Dec 17, 2015 18:30:42
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	10086.0	643.80	18.206	BV
3,5 Dichlorobenzoic	10.393	12186.0	677.65	18.628	BV
4-Nitrophenol	11.280	5178.0	308.97	18.170	BB
DCPAA	12.037	77660.0	382.88	187.160	BV
Dicamba	12.203	21832.0	1344.60	18.804	VV
MCPP	12.300	0.0	0.00	0.000	--
MCPA	12.803	7081.0	5.07	-1.000	BB
DCP	13.157	9154.0	508.17	18.870	BB
2,4-D	13.723	10767.0	598.69	18.804	BB
Pentachlorophenol	14.443	72683.0	4844.71	18.992	BV
Silvex	14.593	29214.0	1957.30	19.006	VB
2,4,5-T	15.237	31018.0	2001.68	18.954	BV
Chloramben	15.500	21143.0	1388.68	18.722	VV
Dinoseb	15.653	19111.0	1048.62	18.898	VV
2,4-DB	15.827	6540.0	340.05	18.932	VV
Bentazon	16.740	3546.0	217.11	18.898	BV
Dacthal	17.013	32149.0	2312.00	18.302	VB
Picloram	17.533	27638.0	2085.24	18.898	BV
Acifluorfen	19.230	18982.0	1107.39	19.254	BV



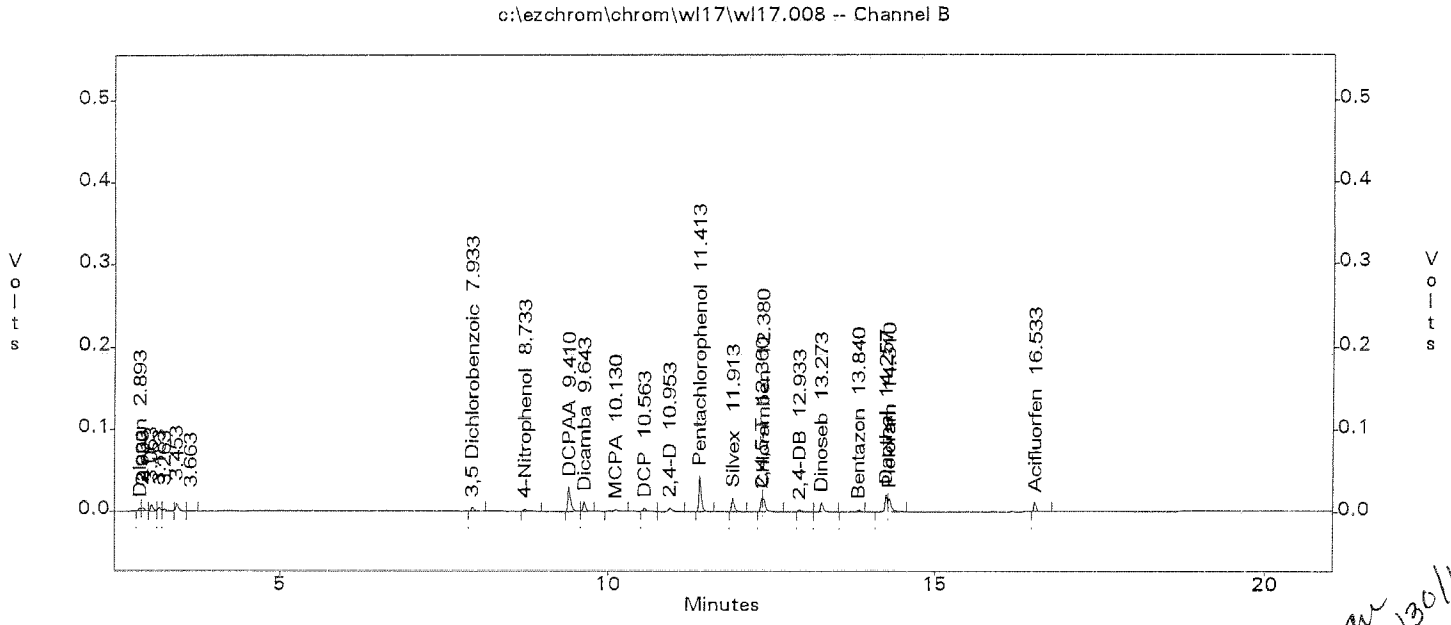
12/30/15
TSF

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.008
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L172
Acquired : Dec 17, 2015 13:59:25
Printed : Dec 17, 2015 18:30:43
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.893	9333.0	618.45	18.206	Bx
3,5 Dichlorobenzoic	7.933	15590.0	757.07	18.628	BB
4-Nitrophenol	8.733	9080.0	430.56	18.170	BV
DCPAA	9.410	84719.0	385.54	187.160	BV
Dicamba	9.643	30223.0	1561.07	18.804	VV
MCPP	9.823	0.0	0.00	0.000	--
MCPA	10.130	6953.0	5.09	-1.000	VV
DCP	10.563	11697.0	564.08	18.870	BV
2,4-D	10.953	14399.0	706.46	18.804	VV
Pentachlorophenol	11.413	106231.0	5597.35	18.992	BB
Silvex	11.913	41162.0	2321.63	19.006	BB
2,4,5-T	12.360	29554.0	1649.51	18.954	Bx
Chloramben	12.380	45098.0	2615.99	18.722	xV
2,4-DB	12.933	7783.0	401.89	18.932	BV
Dinoseb	13.273	28956.0	1494.07	18.898	VV
Bentazon	13.840	5672.0	305.54	18.898	Vx
Dacthal	14.257	46552.0	2450.60	18.302	VV
Picloram	14.310	49864.0	3490.13	18.898	VB
Acifluorfen	16.533	28931.0	1644.22	19.254	BB



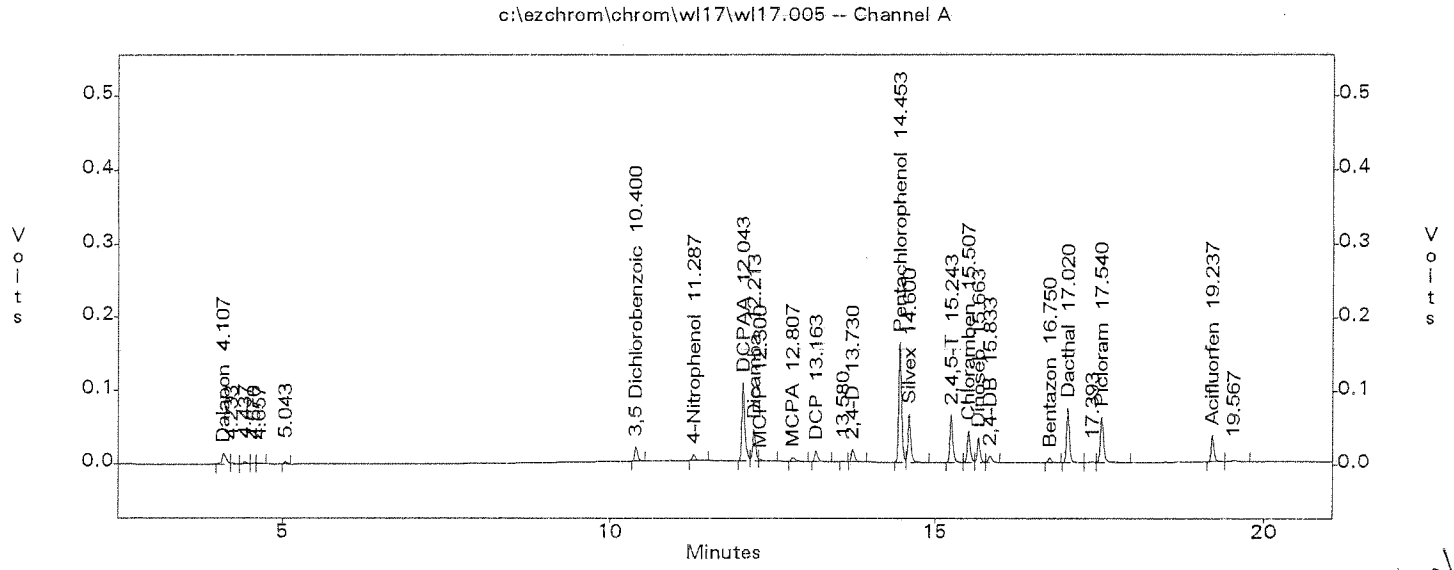
12/30/15
TSS

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.005
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L175
Acquired : Dec 17, 2015 12:36:22
Printed : Dec 17, 2015 18:31:05
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.107	59900.0	643.80	91.030	BV
3,5 Dichlorobenzoic	10.400	64196.0	677.65	93.140	BV
4-Nitrophenol	11.287	28701.0	308.97	90.850	BB
DCPAA	12.043	356688.0	382.88	935.800	BV
Dicamba	12.213	130761.0	1344.60	94.020	Vx
MCPP	12.300	10947.0	2.16	4691.500	xV
MCPA	12.807	23781.0	5.07	4673.000	VB
DCP	13.163	48659.0	508.17	94.350	BB
2,4-D	13.730	57229.0	598.69	94.020	VB
Pentachlorophenol	14.453	503736.0	4844.71	94.960	BV
Silvex	14.600	195292.0	1957.30	95.030	VB
2,4,5-T	15.243	198261.0	2001.68	94.770	BV
Chloramben	15.507	134699.0	1388.68	93.610	VV
Dinoseb	15.663	100494.0	1048.62	94.490	VV
2,4-DB	15.833	32030.0	340.05	94.660	VV
Bentazon	16.750	21149.0	217.11	94.490	BV
Dacthal	17.020	224199.0	2312.00	91.510	VV
Picloram	17.540	212272.0	2085.24	94.490	VV
Acifluorfen	19.237	111012.0	1107.39	96.270	BV



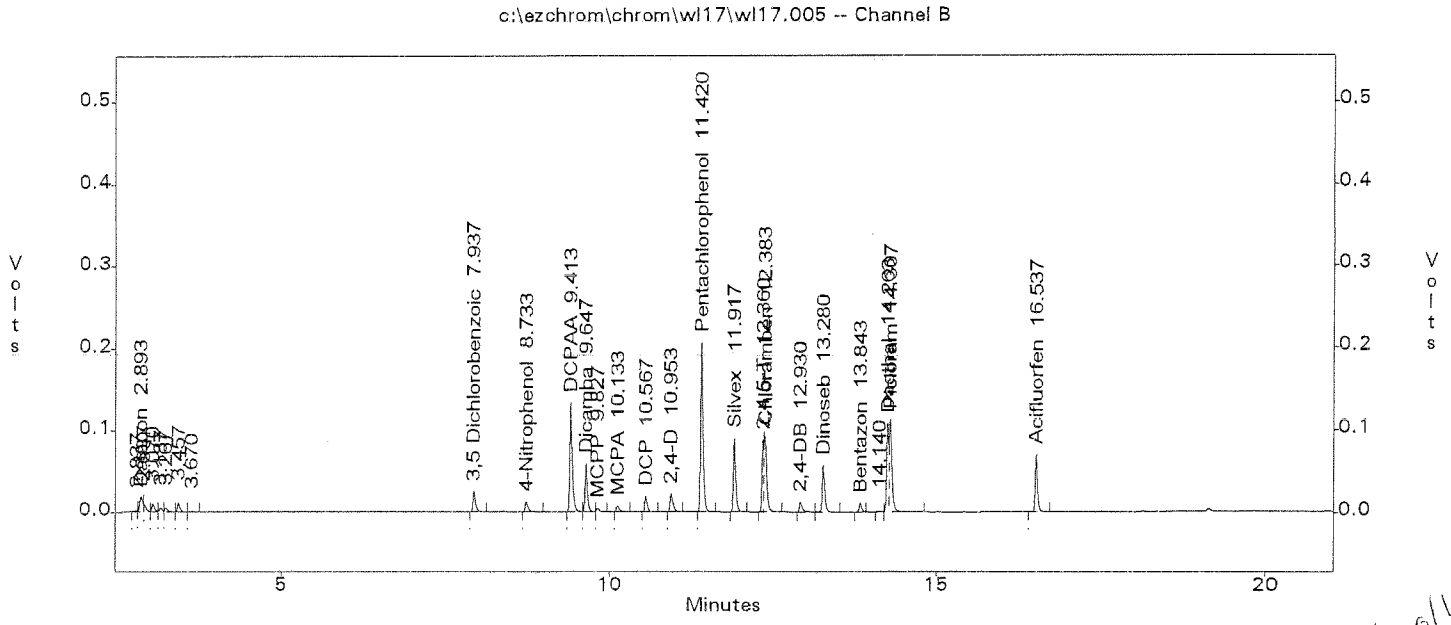
12/30/15
TSS

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.005
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L175
Acquired : Dec 17, 2015 12:36:22
Printed : Dec 17, 2015 18:31:05
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.893	59682.0	618.45	91.030	xx
3,5 Dichlorobenzoic	7.937	70083.0	757.07	93.140	BB
4-Nitrophenol	8.733	38606.0	430.56	90.850	VV
DCPAA	9.413	351372.0	385.54	935.800	BV
Dicamba	9.647	147841.0	1561.07	94.020	VV
MCPP	9.827	12193.0	2.52	4691.500	VV
MCPA	10.133	24264.0	5.09	4673.000	VV
DCP	10.567	52969.0	564.08	94.350	BV
2,4-D	10.953	65970.0	706.46	94.020	VB
Pentachlorophenol	11.420	532192.0	5597.35	94.960	BB
Silvex	11.917	226965.0	2321.63	95.030	BB
2,4,5-T	12.360	158725.0	1649.51	94.770	Bx
Chloramben	12.383	254834.0	2615.99	93.610	xB
2,4-DB	12.930	38267.0	401.89	94.660	BV
Dinoseb	13.280	142864.0	1494.07	94.490	VB
Bentazon	13.843	28912.0	305.54	94.490	Bx
Dacthal	14.263	225813.0	2450.60	91.510	VS
Picloram	14.307	354706.0	3490.13	94.490	SB
Acifluorfen	16.537	163381.0	1644.22	96.270	VB



12/30/15

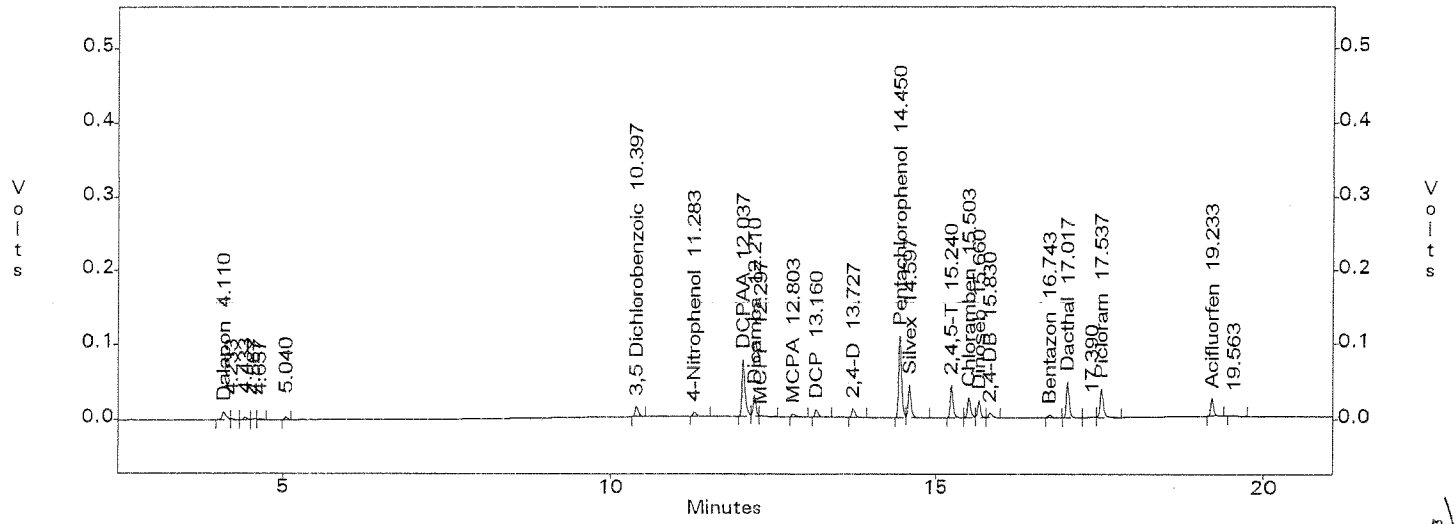
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.006
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L174
Acquired : Dec 17, 2015 13:04:01
Printed : Dec 17, 2015 18:31:16
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.110	40823.0	643.80	63.721	BV
3,5 Dichlorobenzoic	10.397	44143.0	677.65	65.198	BV
4-Nitrophenol	11.283	19805.0	308.97	63.595	BB
DCPAA	12.037	253710.0	382.88	655.060	BV
Dicamba	12.210	87984.0	1344.60	65.814	Vx
MCPP	12.297	6613.0	2.16	3284.050	xV
MCPA	12.803	16869.0	5.07	3271.100	BB
DCP	13.160	33467.0	508.17	66.045	BB
2,4-D	13.727	39626.0	598.69	65.814	VB
Pentachlorophenol	14.450	330690.0	4844.71	66.472	BV
Silvex	14.597	125689.0	1957.30	66.521	VB
2,4,5-T	15.240	130025.0	2001.68	66.339	BV
Chloramben	15.503	86822.0	1388.68	65.527	VV
Dinoseb	15.660	68378.0	1048.62	66.143	VV
2,4-DB	15.830	22254.0	340.05	66.262	VV
Bentazon	16.743	13899.0	217.11	66.143	BV
Dacthal	17.017	142786.0	2312.00	64.057	VV
Picloram	17.537	132472.0	2085.24	66.143	VV
Acifluorfen	19.233	71957.0	1107.39	67.389	BB

c:\ezchrom\chrom\wl17\wl17.006 -- Channel A



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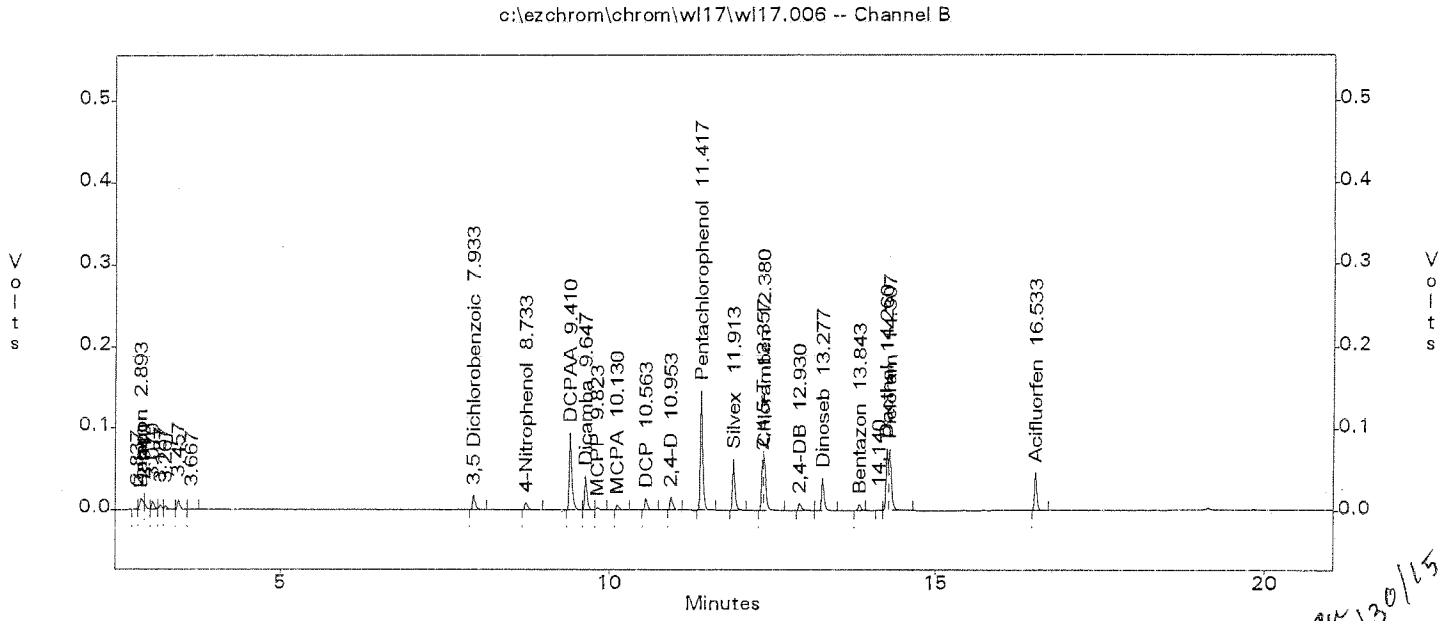
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.006
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L174
Acquired : Dec 17, 2015 13:04:01
Printed : Dec 17, 2015 18:31:16
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.893	43637.0	618.45	63.721	xx
3,5 Dichlorobenzoic	7.933	50123.0	757.07	65.198	BB
4-Nitrophenol	8.733	27960.0	430.56	63.595	VV
DCPAA	9.410	252682.0	385.54	655.060	BV
Dicamba	9.647	103272.0	1561.07	65.814	VV
MCPP	9.823	8314.0	2.52	3284.050	VV
MCPA	10.130	18233.0	5.09	3271.100	VV
DCP	10.563	37747.0	564.08	66.045	BV
2,4-D	10.953	46824.0	706.46	65.814	VB
Pentachlorophenol	11.417	373132.0	5597.35	66.472	BB
Silvex	11.913	156850.0	2321.63	66.521	BV
2,4,5-T	12.357	117466.0	1649.51	66.339	Bx
Chloramben	12.380	169146.0	2615.99	65.527	xV
2,4-DB	12.930	26834.0	401.89	66.262	BV
Dinoseb	13.277	99564.0	1494.07	66.143	VB
Bentazon	13.843	20141.0	305.54	66.143	Bx
Dacthal	14.260	162961.0	2450.60	64.057	VS
Picloram	14.307	230241.0	3490.13	66.143	SB
Acifluorfen	16.533	108058.0	1644.22	67.389	BB



12/30/15

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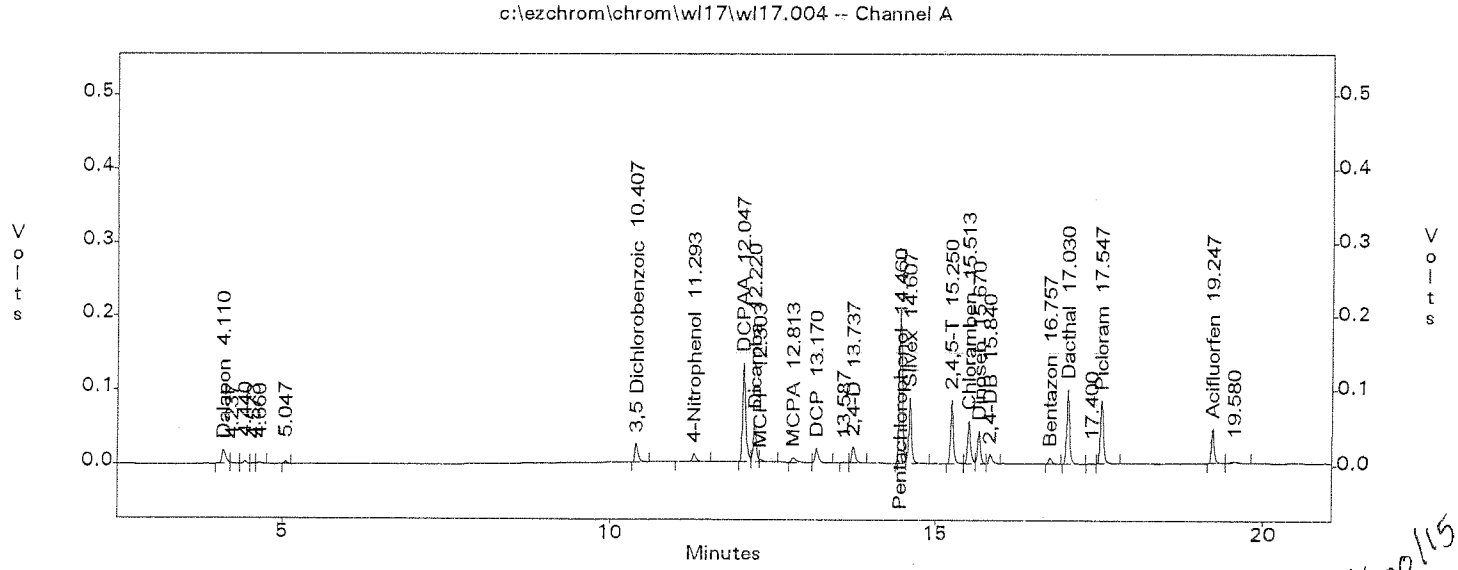
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.004
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L176
Acquired : Dec 17, 2015 12:08:45
Printed : Dec 17, 2015 18:31:26
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.110	75889.0	643.80	118.339	BV
3,5 Dichlorobenzoic	10.407	82414.0	677.65	121.082	BV
4-Nitrophenol	11.293	37174.0	308.97	118.105	VB
DCPAA	12.047	446002.0	382.88	1216.540	BV
Dicamba	12.220	170486.0	1344.60	122.226	Vx
MCPP	12.303	13321.0	2.16	6098.950	xV
MCPA	12.813	29809.0	5.07	6074.900	VV
DCP	13.170	62676.0	508.17	122.655	VB
2,4-D	13.737	72738.0	598.69	122.226	VB
Pentachlorophenol	14.460	658861.0	4844.71	123.448	BV
Silvex	14.607	258406.0	1957.30	123.539	VB
2,4,5-T	15.250	260683.0	2001.68	123.201	BV
Chloramben	15.513	178661.0	1388.68	121.693	VV
Dinoseb	15.670	128622.0	1048.62	122.837	VV
2,4-DB	15.840	41009.0	340.05	123.058	VV
Bentazon	16.757	27729.0	217.11	122.837	BV
Dacthal	17.030	296881.0	2312.00	118.963	VV
Picloram	17.547	277644.0	2085.24	122.837	VB
Acifluorfen	19.247	142817.0	1107.39	125.151	BV



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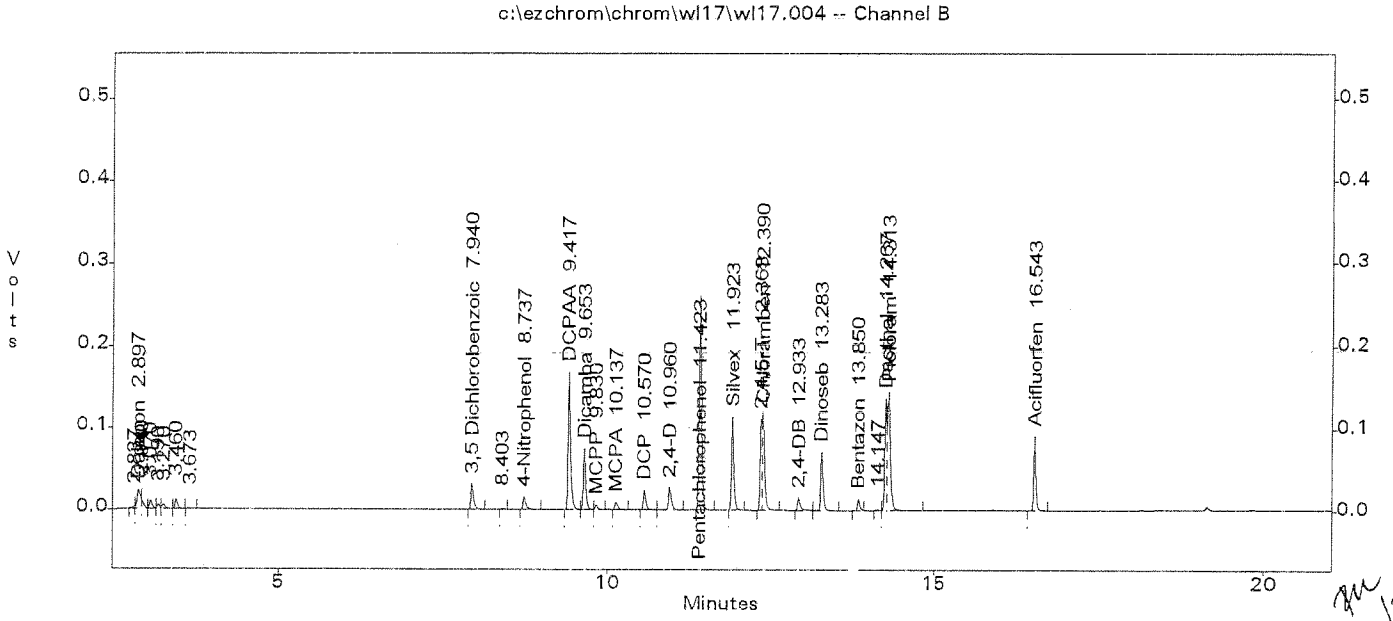
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.004
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L176
Acquired : Dec 17, 2015 12:08:45
Printed : Dec 17, 2015 18:31:27
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.897	75587.0	618.45	118.339	xx
3,5 Dichlorobenzoic	7.940	87201.0	757.07	121.082	BB
4-Nitrophenol	8.737	47201.0	430.56	118.105	VV
DCPAA	9.417	437533.0	385.54	1216.540	BV
Dicamba	9.653	187091.0	1561.07	122.226	VV
MCPP	9.830	15594.0	2.52	6098.950	VV
MCPA	10.137	29193.0	5.09	6074.900	VV
DCP	10.570	66041.0	564.08	122.655	BV
2,4-D	10.960	83238.0	706.46	122.226	VV
Pentachlorophenol	11.423	671033.0	5597.35	123.448	BB
Silvex	11.923	287685.0	2321.63	123.539	BB
2,4,5-T	12.363	189958.0	1649.51	123.201	Bx
Chloramben	12.390	333171.0	2615.99	121.693	xB
2,4-DB	12.933	48184.0	401.89	123.058	BV
Dinoseb	13.283	179575.0	1494.07	122.837	VB
Bentazon	13.850	37168.0	305.54	122.837	Bx
Dacthal	14.267	293205.0	2450.60	118.963	VS
Picloram	14.313	445607.0	3490.13	122.837	SV
Acifluorfen	16.543	210544.0	1644.22	125.151	VB



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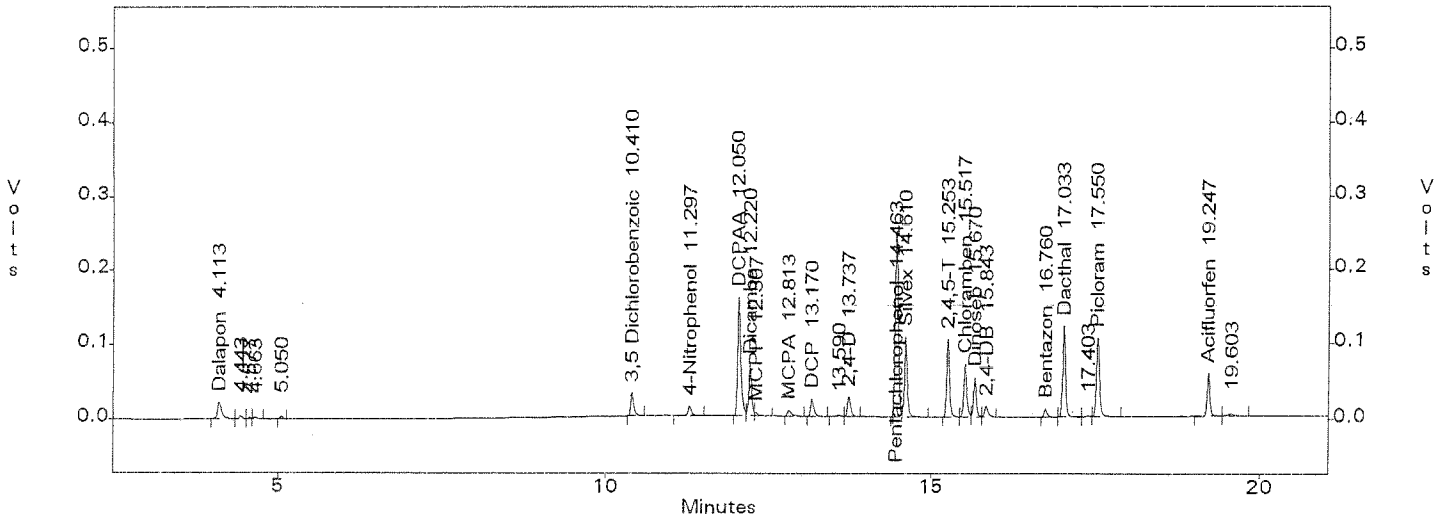
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.003
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L177
Acquired : Dec 17, 2015 11:41:14
Printed : Dec 17, 2015 18:31:38
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.113	97840.0	643.80	145.648	BV
3,5 Dichlorobenzoic	10.410	98683.0	677.65	149.024	BV
4-Nitrophenol	11.297	43517.0	308.97	145.360	VB
DCPAA	12.050	528693.0	382.88	1497.280	BV
Dicamba	12.220	206472.0	1344.60	150.432	Vx
MCPP	12.307	16430.0	2.16	7506.400	xV
MCPA	12.813	33050.0	5.07	7476.800	VB
DCP	13.170	74369.0	508.17	150.960	BV
2,4-D	13.737	87495.0	598.69	150.432	VB
Pentachlorophenol	14.463	802981.0	4844.71	151.936	BV
Silvex	14.610	319824.0	1957.30	152.048	VV
2,4,5-T	15.253	319835.0	2001.68	151.632	BV
Chloramben	15.517	224020.0	1388.68	149.776	VV
Dinoseb	15.670	156673.0	1048.62	151.184	VV
2,4-DB	15.843	50419.0	340.05	151.456	VV
Bentazon	16.760	34548.0	217.11	151.184	BV
Dacthal	17.033	369534.0	2312.00	146.416	VV
Picloram	17.550	350635.0	2085.24	151.184	VB
Acifluorfen	19.247	173626.0	1107.39	154.032	VV

c:\ezchrom\chrom\wl17\wl17.003 -- Channel A



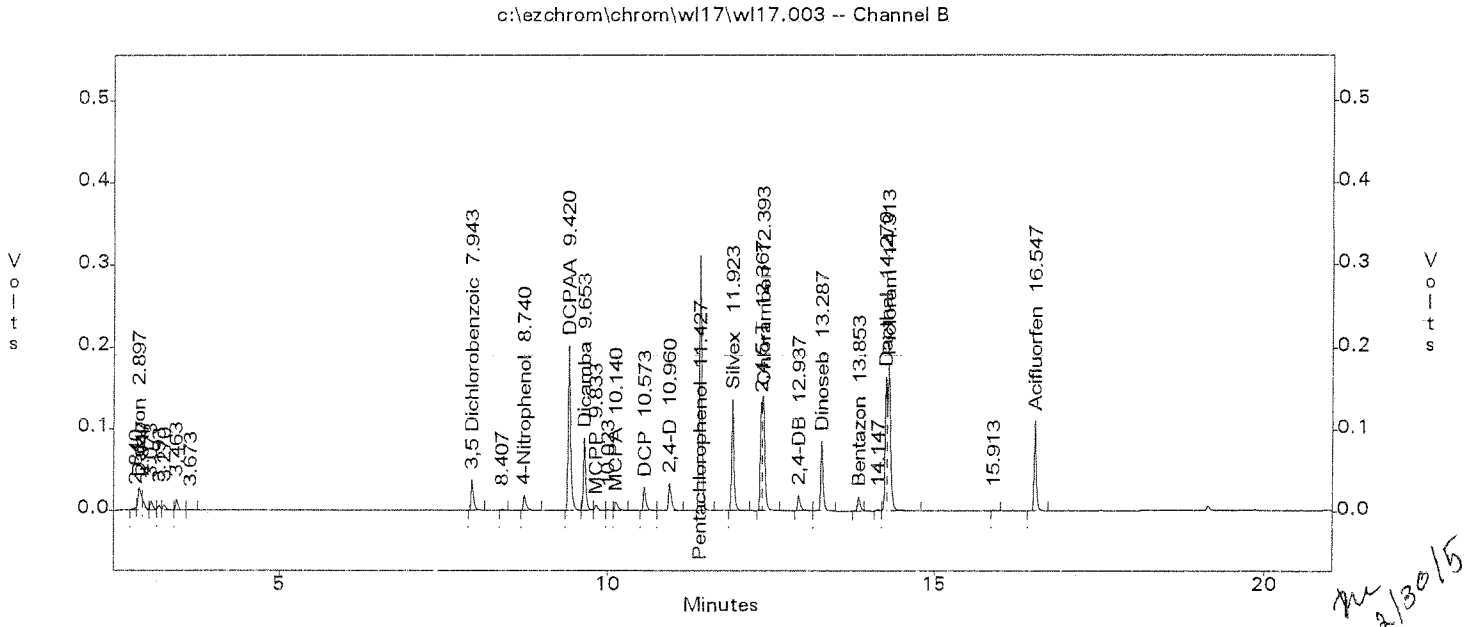
12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.003
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L177
Acquired : Dec 17, 2015 11:41:14
Printed : Dec 17, 2015 18:31:38
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.897	94156.0	618.45	145.648	xx
3,5 Dichlorobenzoic	7.943	102708.0	757.07	149.024	BB
4-Nitrophenol	8.740	54933.0	430.56	145.360	BV
DCPAA	9.420	517707.0	385.54	1497.280	BV
Dicamba	9.653	223214.0	1561.07	150.432	VV
MCPP	9.833	18701.0	2.52	7506.400	VV
MCPA	10.140	33731.0	5.09	7476.800	VV
DCP	10.573	77906.0	564.08	150.960	BV
2,4-D	10.960	98298.0	706.46	150.432	VV
Pentachlorophenol	11.427	801155.0	5597.35	151.936	BB
Silvex	11.923	345259.0	2321.63	152.048	BB
2,4,5-T	12.367	237009.0	1649.51	151.632	Bx
Chloramben	12.393	388280.0	2615.99	149.776	xB
2,4-DB	12.937	57575.0	401.89	151.456	BV
Dinoseb	13.287	212480.0	1494.07	151.184	VB
Bentazon	13.853	44951.0	305.54	151.184	Bx
Dacthal	14.270	333708.0	2450.60	146.416	VS
Picloram	14.313	553309.0	3490.13	151.184	SV
Acifluorfen	16.547	254232.0	1644.22	154.032	VB



12/30/15

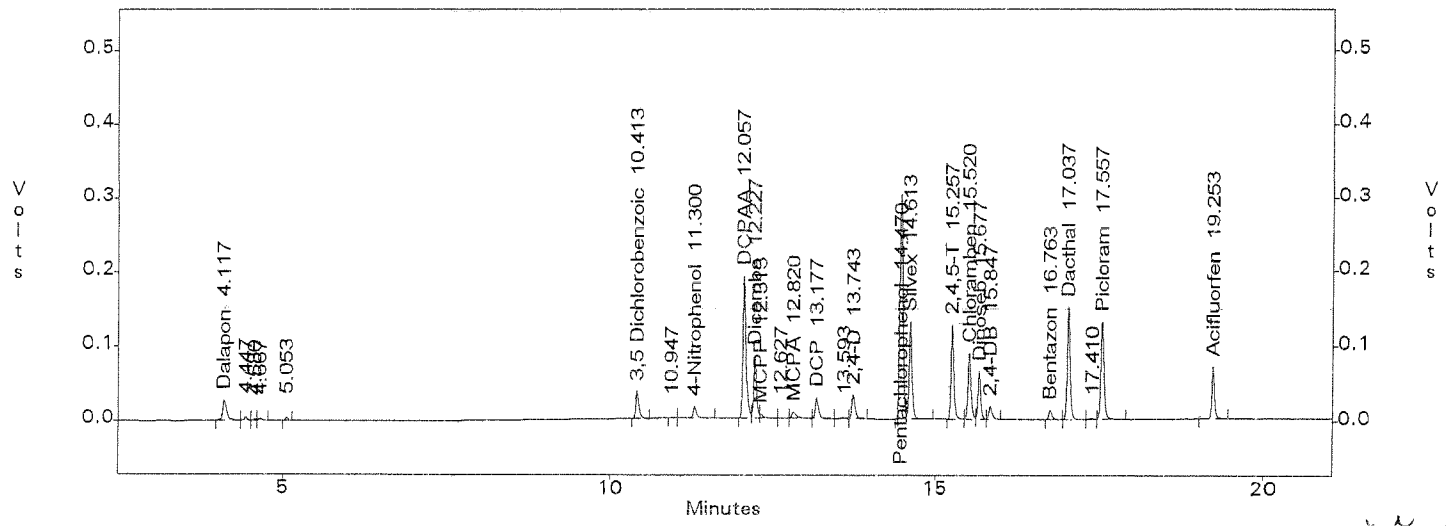
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.002
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L178
Acquired : Dec 17, 2015 11:13:44
Printed : Dec 17, 2015 18:31:49
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.117	118619.0	643.80	182.060	BV
3,5 Dichlorobenzoic	10.413	120131.0	677.65	186.280	BV
4-Nitrophenol	11.300	54478.0	308.97	181.700	VV
DCPAA	12.057	633215.0	382.88	1871.600	BV
Dicamba	12.227	254545.0	1344.60	188.040	Vx
MCPP	12.313	21579.0	2.16	9383.000	xV
MCPA	12.820	42254.0	5.07	9346.000	VV
DCP	13.177	93740.0	508.17	188.700	VV
2,4-D	13.743	106587.0	598.69	188.040	VB
Pentachlorophenol	14.470	987513.0	4844.71	189.920	BV
Silvex	14.613	397584.0	1957.30	190.060	VV
2,4,5-T	15.257	394952.0	2001.68	189.540	BV
Chloramben	15.520	280047.0	1388.68	187.220	VV
Dinoseb	15.677	189777.0	1048.62	188.980	VV
2,4-DB	15.847	61362.0	340.05	189.320	VV
Bentazon	16.763	42616.0	217.11	188.980	BV
Dacthal	17.037	461208.0	2312.00	183.020	VV
Picloram	17.557	439835.0	2085.24	188.980	VB
Acifluorfen	19.253	204945.0	1107.39	192.540	VV

c:\ezchrom\chrom\wl17\wl17.002 -- Channel A



12/30/15

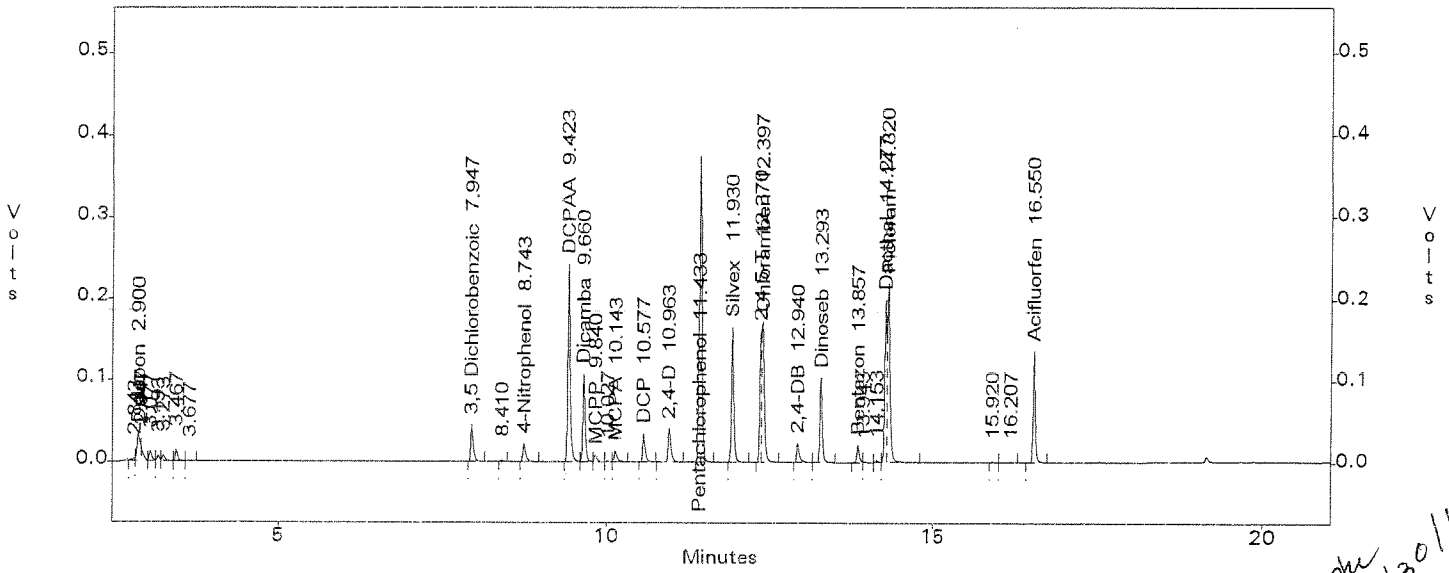
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.002
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L178
Acquired : Dec 17, 2015 11:13:44
Printed : Dec 17, 2015 18:31:50
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.900	110536.0	618.45	182.060	xx
3,5 Dichlorobenzoic	7.947	121575.0	757.07	186.280	BB
4-Nitrophenol	8.743	64719.0	430.56	181.700	BB
DCPAA	9.423	619079.0	385.54	1871.600	BV
Dicamba	9.660	267978.0	1561.07	188.040	VV
MCPP	9.840	22816.0	2.52	9383.000	VV
MCPA	10.143	39440.0	5.09	9346.000	VV
DCP	10.577	92747.0	564.08	188.700	BV
2,4-D	10.963	118024.0	706.46	188.040	VV
Pentachlorophenol	11.433	964217.0	5597.35	189.920	VB
Silvex	11.930	415630.0	2321.63	190.060	BB
2,4,5-T	12.370	274070.0	1649.51	189.540	Bx
Chloramben	12.397	478747.0	2615.99	187.220	xB
2,4-DB	12.940	69040.0	401.89	189.320	BV
Dinoseb	13.293	256045.0	1494.07	188.980	VB
Bentazon	13.857	54861.0	305.54	188.980	Bx
Dacthal	14.277	386903.0	2450.60	183.020	VS
Picloram	14.320	685657.0	3490.13	188.980	SV
Acifluorfen	16.550	309912.0	1644.22	192.540	VB

c:\ezchrom\chrom\wl17\wl17.002 -- Channel B



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SECOND SOURCE VERIFICATION

SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17010A 12/17/2015 14:54
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.100	4.084	4.116	91.0	643.800	57229	88.89	-2		15
3,5-Dichlorobenzo	10.390	10.369	10.411	93.1	677.700	58998	87.06	-7		15
4-Nitrophenol	11.277	11.257	11.297	90.8	309.000	29926	96.86	7		15
Dicamba	12.200	12.177	12.223	94.0	1344.6	125650	93.45	-1		15
Dichloroprop	13.153	13.131	13.175	94.3	508.200	50527	99.43	5		15
2,4-D	13.720	13.693	13.747	94.0	598.700	56018	93.57	-0		15
Pentachlorophenol	14.443	14.416	14.470	95.0	4844.7	500042	103.21	9		15
2,4,5-TP(Silvex)	14.590	14.569	14.611	95.0	1957.3	194932	99.59	5		15
Chloramben	15.497	15.475	15.519	93.6	1388.7	137697	99.16	6		15
2,4,5-T	15.233	15.211	15.255	94.8	2001.7	201913	100.87	6		15
2,4-DB	15.823	15.802	15.844	94.7	340.000	32951	96.90	2		15
Dinoseb	15.650	15.629	15.671	94.5	1048.6	105271	100.39	6		15
Bentazon	16.737	16.716	16.758	94.5	217.100	21222	97.75	3		15
Dacthal	17.010	16.989	17.031	91.5	2312.0	227994	98.61	8		15
Picloram	17.530	17.509	17.551	94.5	2085.2	198450	95.17	1		15
Acifluorfen	19.227	19.206	19.248	96.3	1107.4	106530	96.20	-0		15

12/30/15

SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17010B 12/17/2015 14:54
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.887	2.871	2.903	91.0	618.400	57120	92.36	1		15
3,5-Dichlorobenzo	7.927	7.906	7.948	93.1	757.100	60800	80.31	-14		15
4-Nitrophenol	8.723	8.692	8.754	90.8	430.600	40028	92.97	2		15
Dicamba	9.640	9.616	9.664	94.0	1561.1	147039	94.19	0		15
Dichloroprop	10.557	10.531	10.583	94.3	564.100	53942	95.63	1		15
2,4-D	10.943	10.921	10.965	94.0	706.500	62094	87.89	-7		15
Pentachlorophenol	11.410	11.386	11.434	95.0	5597.4	526769	94.11	-1		15
2,4,5-TP(Silvex)	11.907	11.883	11.931	95.0	2321.6	225667	97.20	2		15
Chloramben	12.373	12.347	12.399	93.6	2616.0	262061	100.18	7		15
2,4,5-T	12.350	12.326	12.374	94.8	1649.5	152362	92.37	-3		15
2,4-DB	12.923	12.897	12.949	94.7	401.900	35546	88.45	-7		15
Dinoseb	13.270	13.246	13.294	94.5	1494.1	148259	99.23	5		15
Bentazon	13.837	13.810	13.864	94.5	305.500	28438	93.08	-1		15
Dacthal	14.253	14.226	14.280	91.5	2450.6	236317	96.43	5		15
Picloram	14.300	14.274	14.326	94.5	3490.1	336314	96.36	2		15
Acifluorfen	16.530	16.506	16.554	96.3	1644.2	161903	98.47	2		15

TM 12/30/15

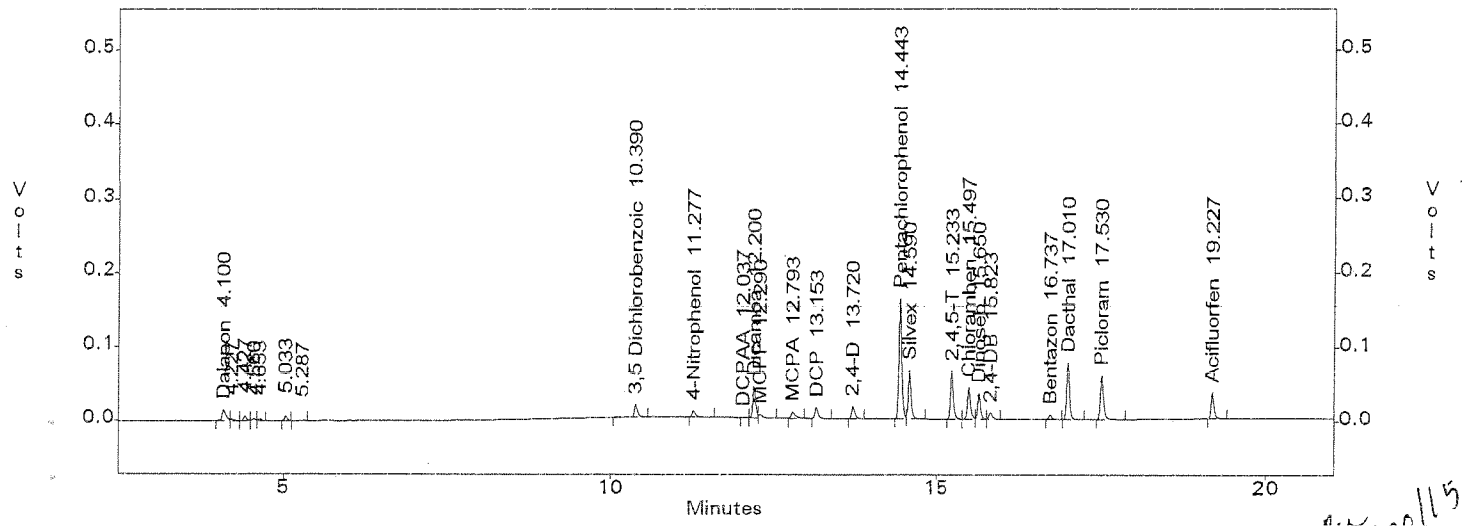
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.010
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17001
Acquired : Dec 17, 2015 14:54:43
Printed : Dec 17, 2015 18:34:19
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.100	57229.0	643.80	88.893	BV
3,5 Dichlorobenzoic	10.390	58998.0	677.65	87.062	BV
4-Nitrophenol	11.277	29926.0	308.97	96.858	BB
DCPAA	12.037	2510.0	382.88	6.556	BV
Dicamba	12.200	125650.0	1344.60	93.448	VV
MCPP	12.290	17926.0	2.16	8296.689	VB
MCPA	12.793	39506.0	5.07	7785.667	BV
DCP	13.153	50527.0	508.17	99.430	VV
2,4-D	13.720	56018.0	598.69	93.568	BB
Pentachlorophenol	14.443	500042.0	4844.71	103.214	BV
Silvex	14.590	194932.0	1957.30	99.592	VB
2,4,5-T	15.233	201913.0	2001.68	100.872	BV
Chloramben	15.497	137697.0	1388.68	99.156	VV
Dinoseb	15.650	105271.0	1048.62	100.390	VV
2,4-DB	15.823	32951.0	340.05	96.901	VV
Bentazon	16.737	21222.0	217.11	97.748	BV
Dacthal	17.010	227994.0	2312.00	98.613	VV
Picloram	17.530	198450.0	2085.24	95.169	VV
Acifluorfen	19.227	106530.0	1107.39	96.200	BV

c:\ezchrom\chrom\wl17\wl17.010 -- Channel A



12/30/15

012

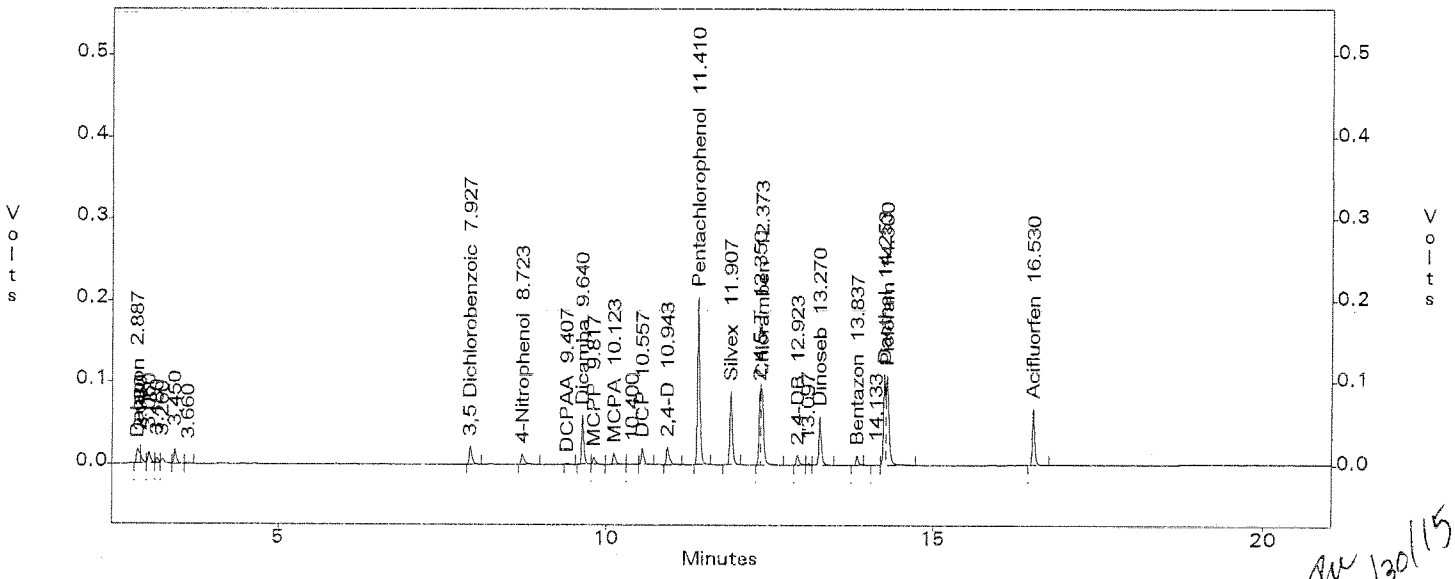
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.010
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17001
Acquired : Dec 17, 2015 14:54:43
Printed : Dec 17, 2015 18:34:19
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.887	57120.0	618.45	92.360	Bx
3,5 Dichlorobenzoic	7.927	60800.0	757.07	80.310	BB
4-Nitrophenol	8.723	40028.0	430.56	92.968	BV
DCPAA	9.407	4741.0	385.54	12.297	BV
Dicamba	9.640	147039.0	1561.07	94.191	VV
MCPP	9.817	23421.0	2.52	9277.546	VV
MCPA	10.123	42285.0	5.09	8310.917	VV
DCP	10.557	53942.0	564.08	95.628	VB
2,4-D	10.943	62094.0	706.46	87.895	BV
Pentachlorophenol	11.410	526769.0	5597.35	94.110	BV
Silvex	11.907	225667.0	2321.63	97.202	BV
2,4,5-T	12.350	152362.0	1649.51	92.368	Bx
Chloramben	12.373	262061.0	2615.99	100.177	xB
2,4-DB	12.923	35546.0	401.89	88.446	BV
Dinoseb	13.270	148259.0	1494.07	99.232	VB
Bentazon	13.837	28438.0	305.54	93.076	Bx
Dacthal	14.253	236317.0	2450.60	96.432	VS
Picloram	14.300	336314.0	3490.13	96.361	SB
Acifluorfen	16.530	161903.0	1644.22	98.468	VB

c:\ezchrom\chrom\wl17\wl17.010 -- Channel B



Rec 12/30/15
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SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17011A 12/17/2015 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
MCPP	12.293	12.270	12.316	4693.0	2.160	8899	4118.72	-12		15
MCPA	12.797	12.775	12.819	4673.0	5.070	24590	4846.09	4		15

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SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17011B 12/17/2015 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
MCPP	9.817	9.796	9.838	4693.0	2.520	12328	4883.38	4		15
MCPA	10.123	10.099	10.147	4673.0	5.090	25772	5065.37	8		15

12/30/15

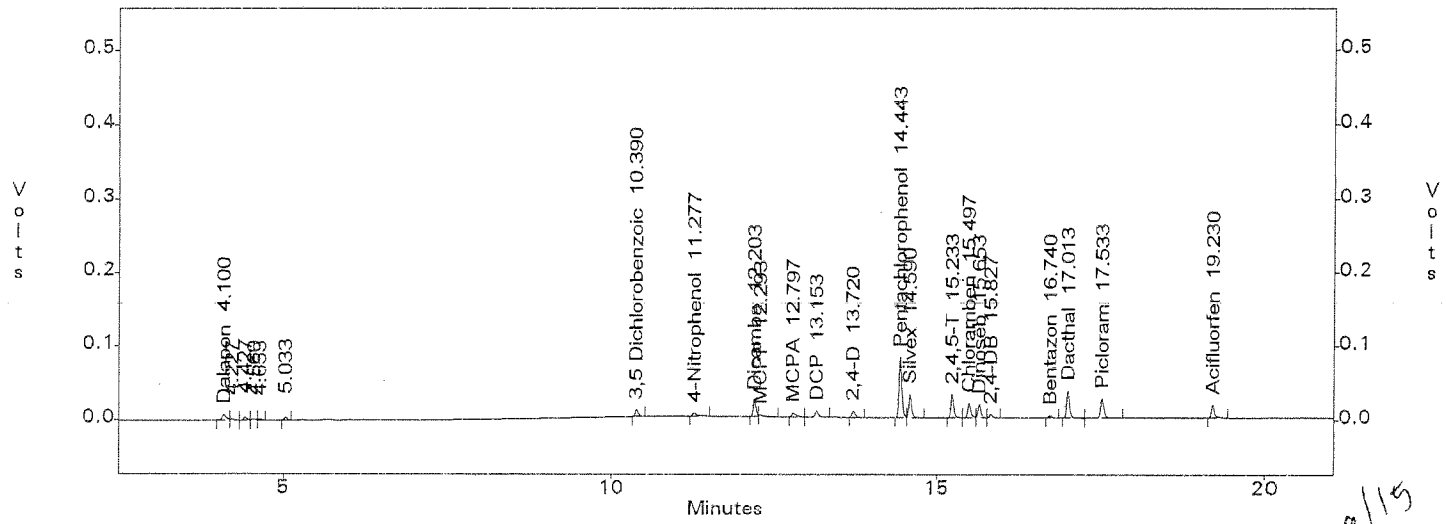
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.011
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17002
Acquired : Dec 17, 2015 15:22:22
Printed : Dec 17, 2015 18:35:11
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.100	30302.0	643.80	47.068	BV
3,5 Dichlorobenzoic	10.390	29605.0	677.65	43.688	BV
4-Nitrophenol	11.277	15903.0	308.97	51.471	BB
DCPAA	12.043	0.0	0.00	0.000	--
Dicamba	12.203	63636.0	1344.60	47.327	VV
MCPP	12.293	8899.0	2.16	4118.724	VB
MCPA	12.797	24590.0	5.07	4846.087	BV
DCP	13.153	28313.0	508.17	55.716	VB
2,4-D	13.720	29603.0	598.69	49.446	BB
Pentachlorophenol	14.443	244298.0	4844.71	50.426	BV
Silvex	14.590	93654.0	1957.30	47.849	VB
2,4,5-T	15.233	99367.0	2001.68	49.642	BV
Chloramben	15.497	66800.0	1388.68	48.103	VV
Dinoseb	15.653	54759.0	1048.62	52.220	VV
2,4-DB	15.827	16824.0	340.05	49.475	VV
Bentazon	16.740	10652.0	217.11	49.063	BV
Dacthal	17.013	107611.0	2312.00	46.545	VV
Picloram	17.533	91095.0	2085.24	43.686	VB
Acifluorfen	19.230	55981.0	1107.39	50.552	BV

c:\ezchrom\chrom\wl17\wl17.011 -- Channel A



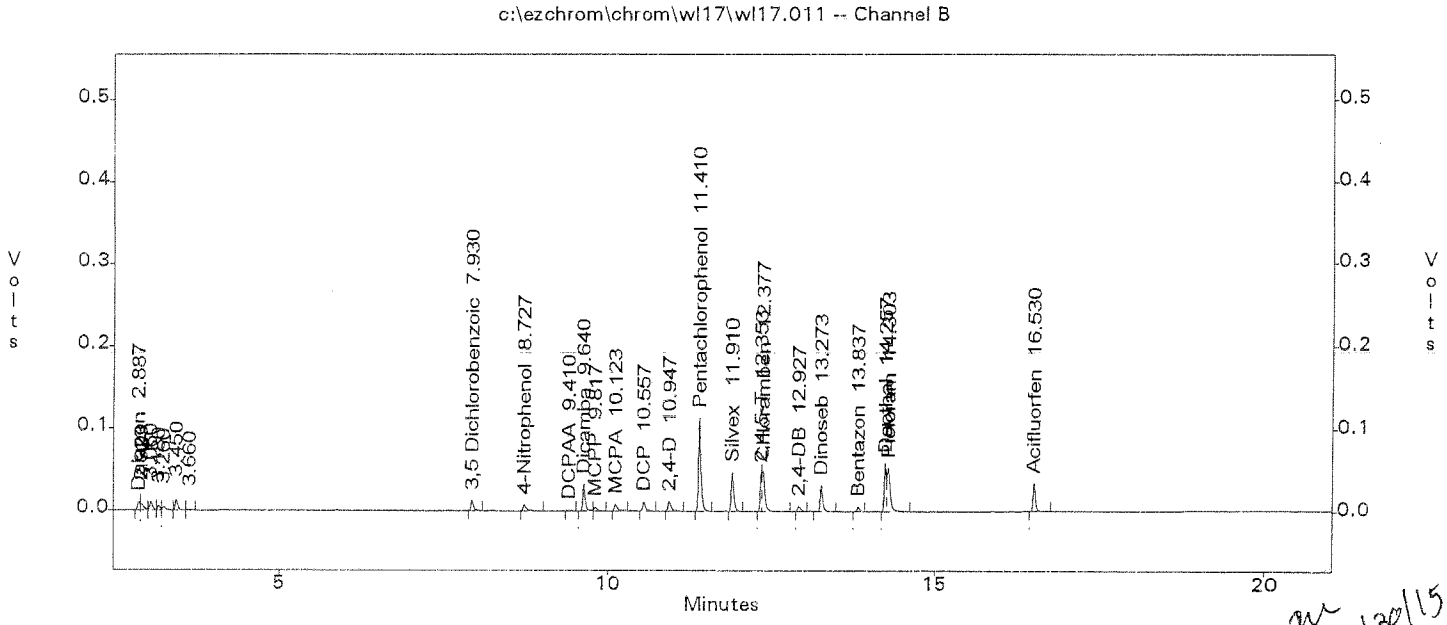
12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.011
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17002
Acquired : Dec 17, 2015 15:22:22
Printed : Dec 17, 2015 18:35:11
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.887	24683.0	618.45	39.911	Bx
3,5 Dichlorobenzoic	7.930	34194.0	757.07	45.166	BB
4-Nitrophenol	8.727	23284.0	430.56	54.079	BB
DCPAA	9.410	2427.0	385.54	6.295	BV
Dicamba	9.640	79716.0	1561.07	51.065	VV
MCPP	9.817	12328.0	2.52	4883.377	VV
MCPA	10.123	25772.0	5.09	5065.365	BV
DCP	10.557	30418.0	564.08	53.925	VB
2,4-D	10.947	34849.0	706.46	49.329	BV
Pentachlorophenol	11.410	288217.0	5597.35	51.492	BV
Silvex	11.910	118881.0	2321.63	51.206	BV
2,4,5-T	12.353	82018.0	1649.51	49.723	Bx
Chloramben	12.377	139920.0	2615.99	53.486	xV
2,4-DB	12.927	19337.0	401.89	48.115	VV
Dinoseb	13.273	80495.0	1494.07	53.876	VB
Bentazon	13.837	14561.0	305.54	47.657	Bx
Dacthal	14.257	128996.0	2450.60	52.638	VS
Picloram	14.303	167923.0	3490.13	48.114	SB
Acifluorfen	16.530	83820.0	1644.22	50.979	BB



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DAILY CALIBRATIONS

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19002A 02/19/2016 14:05
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.103	4.087	4.119	91.0	643.800	58186	90.38	-1		20
3,5-Dichlorobenzo	10.397	10.376	10.418	93.1	677.700	59184	87.34	-6		20
4-Nitrophenol	11.283	11.263	11.303	90.8	309.000	29604	95.82	5		20
Dicamba	12.203	12.180	12.226	94.0	1344.6	119656	88.99	-5		20
MCPP	12.290	12.267	12.313	4693.0	2.160	11405	5278.58	12		20
MCPA	12.797	12.775	12.819	4673.0	5.070	22983	4529.39	-3		20
Dichloroprop	13.153	13.131	13.175	94.3	508.200	44780	88.12	-7		20
2,4-D	13.720	13.693	13.747	94.0	598.700	52316	87.38	-7		20
Pentachlorophenol	14.443	14.416	14.470	95.0	4844.7	469004	96.81	2		20
2,4,5-TP(Silvex)	14.590	14.569	14.611	95.0	1957.3	178287	91.09	-4		20
Chloramben	15.497	15.475	15.519	93.6	1388.7	123352	88.83	-5		20
2,4,5-T	15.233	15.211	15.255	94.8	2001.7	182820	91.33	-4		20
2,4-DB	15.823	15.802	15.844	94.7	340.000	27779	81.69	-14		20
Dinoseb	15.650	15.629	15.671	94.5	1048.6	109516	104.44	11		20
Bentazon	16.737	16.716	16.758	94.5	217.100	18595	85.65	-9		20
Dacthal	17.010	16.989	17.031	91.5	2312.0	205861	89.04	-3		20
Picloram	17.530	17.509	17.551	94.5	2085.2	194479	93.26	-1		20
Acifluorfen	19.227	19.206	19.248	96.3	1107.4	120245	108.58	13		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	12.033	12.010	12.056	935.8	382.900	329848	861.50	-8		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19002B 02/19/2016 14:05
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.883	2.867	2.899	91.0	618.400	56680	91.65	1		20
3,5-Dichlorobenzo	7.920	7.899	7.941	93.1	757.100	70696	93.38	0		20
4-Nitrophenol	8.717	8.686	8.748	90.8	430.600	45594	105.89	17		20
Dicamba	9.630	9.606	9.654	94.0	1561.1	144631	92.65	-1		20
MCPP	9.807	9.786	9.828	4693.0	2.520	13100	5189.18	11		20
MCPA	10.113	10.089	10.137	4673.0	5.090	26717	5251.10	12		20
Dichloroprop	10.547	10.521	10.573	94.3	564.100	53736	95.26	1		20
2,4-D	10.937	10.915	10.959	94.0	706.500	65041	92.07	-2		20
Pentachlorophenol	11.400	11.376	11.424	95.0	5597.4	537803	96.08	1		20
2,4,5-TP(Silvex)	11.897	11.873	11.921	95.0	2321.6	229580	98.89	4		20
Chloramben	12.363	12.337	12.389	93.6	2616.0	256856	98.19	5		20
2,4,5-T	12.340	12.316	12.364	94.8	1649.5	157210	95.31	1		20
2,4-DB	12.910	12.884	12.936	94.7	401.900	38596	96.04	1		20
Dinoseb	13.257	13.233	13.281	94.5	1494.1	156931	105.04	11		20
Bentazon	13.820	13.793	13.847	94.5	305.500	29365	96.11	2		20
Dacthal	14.237	14.210	14.264	91.5	2450.6	233097	95.12	4		20
Picloram	14.283	14.257	14.309	94.5	3490.1	339631	97.31	3		20
Acifluorfen	16.510	16.486	16.534	96.3	1644.2	170982	103.99	8		20

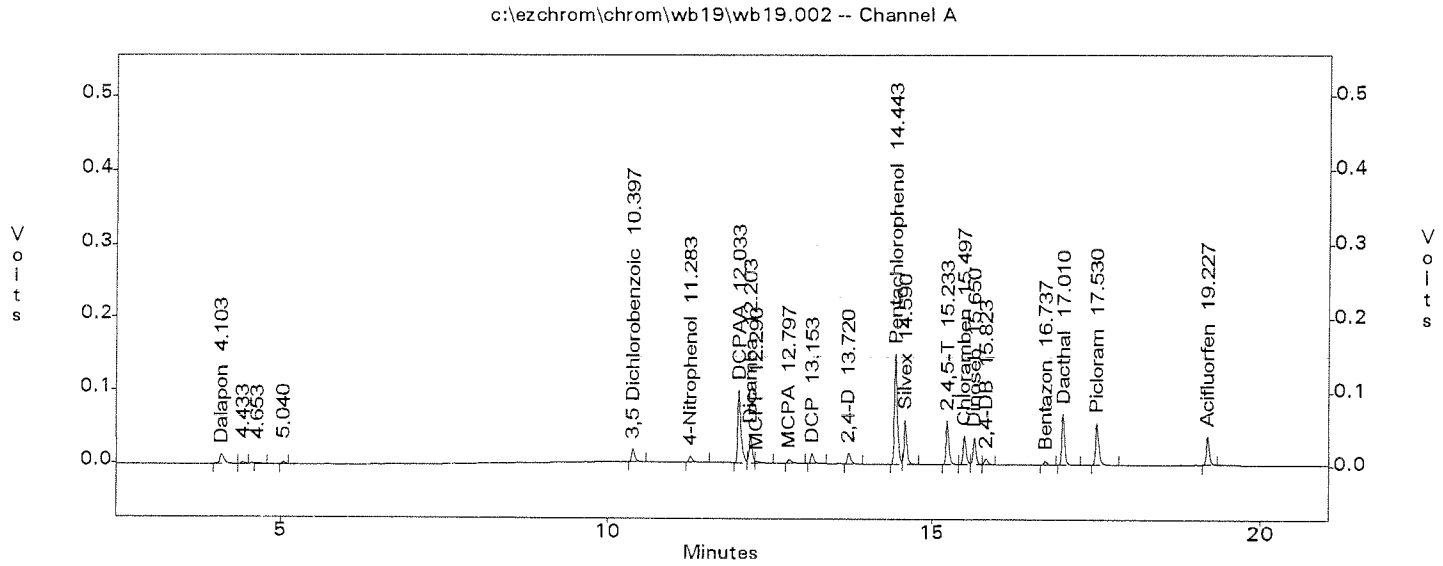
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.393	9.369	9.417	935.8	385.500	346647	899.13	-4		20

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.002
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17049
Acquired : Feb 19, 2016 14:05:23
Printed : Feb 19, 2016 14:30:49
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	58186.0	643.80	90.379	BV
3,5 Dichlorobenzoic	10.397	59184.0	677.65	87.337	BV
4-Nitrophenol	11.283	29604.0	308.97	95.815	BB
DCPAA	12.033	329848.0	382.88	861.502	BV
Dicamba	12.203	119656.0	1344.60	88.990	Vx
MCPP	12.290	11405.0	2.16	5278.575	xV
MCPA	12.797	22983.0	5.07	4529.387	Bx
DCP	13.153	44780.0	508.17	88.120	vv
2,4-D	13.720	52316.0	598.69	87.384	VB
Pentachlorophenol	14.443	469004.0	4844.71	96.807	BV
Silvex	14.590	178287.0	1957.30	91.088	VI
2,4,5-T	15.233	182820.0	2001.68	91.333	BV
Chloramben	15.497	123352.0	1388.68	88.827	VV
Dinoseb	15.650	109516.0	1048.62	104.438	VV
2,4-DB	15.823	27779.0	340.05	81.692	VV
Bentazon	16.737	18595.0	217.11	85.648	Vx
Dacthal	17.010	205861.0	2312.00	89.040	VV
Picloram	17.530	194479.0	2085.24	93.265	VB
Acifluorfen	19.227	120245.0	1107.39	108.585	vv



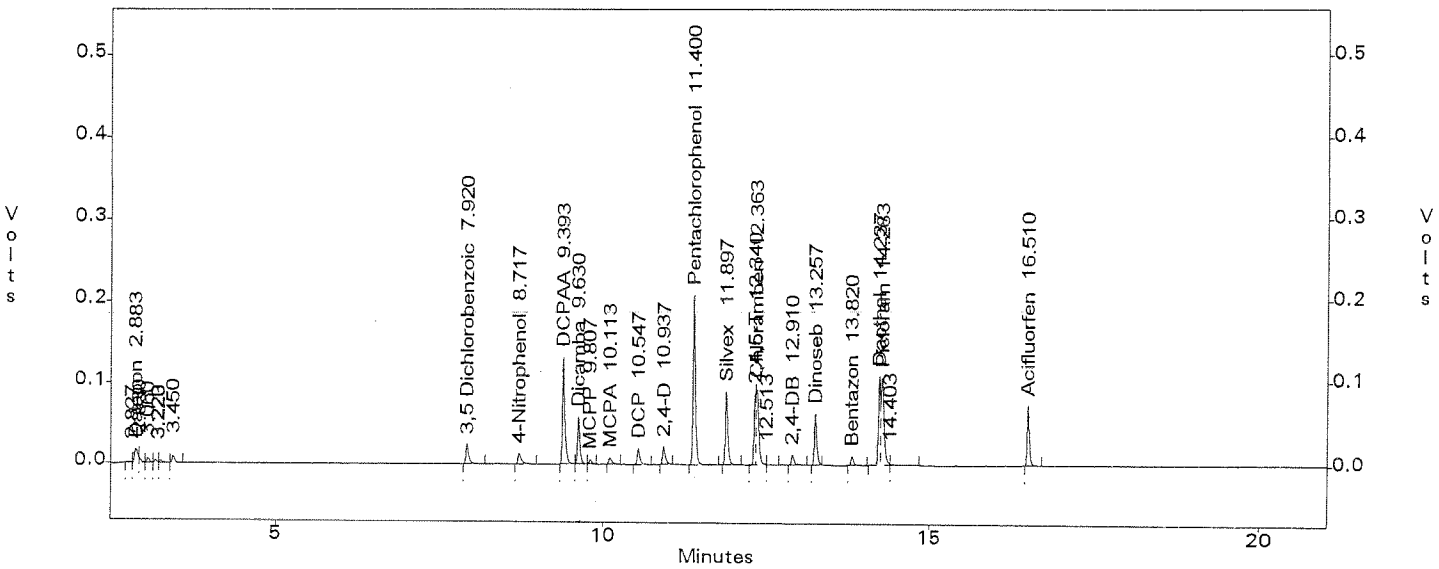
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.002
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17049
Acquired : Feb 19, 2016 14:05:23
Printed : Feb 19, 2016 14:30:49
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.883	56680.0	618.45	91.648	xx
3,5 Dichlorobenzoic	7.920	70696.0	757.07	93.381	BV
4-Nitrophenol	8.717	45594.0	430.56	105.895	BV
DCPAA	9.393	346647.0	385.54	899.132	BV
Dicamba	9.630	144631.0	1561.07	92.649	VV
MCPP	9.807	13100.0	2.52	5189.183	vv
MCPA	10.113	26717.0	5.09	5251.100	BI
DCP	10.547	53736.0	564.08	95.263	BV
2,4-D	10.937	65041.0	706.46	92.066	VI
Pentachlorophenol	11.400	537803.0	5597.35	96.082	BV
Silvex	11.897	229580.0	2321.63	98.887	vv
2,4,5-T	12.340	157210.0	1649.51	95.307	Bx
Chloramben	12.363	256856.0	2615.99	98.187	xx
2,4-DB	12.910	38596.0	401.89	96.035	vv
Dinoseb	13.257	156931.0	1494.07	105.036	VI
Bentazon	13.820	29365.0	305.54	96.110	vv
Dacthal	14.237	233097.0	2450.60	95.118	Vx
Picloram	14.283	339631.0	3490.13	97.312	xx
Acifluorfen	16.510	170982.0	1644.22	103.990	BB

c:\ezchrom\chrom\wb19\wb19.002 -- Channel B



CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19015A 02/19/2016 21:25
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.097	4.081	4.113	91.0	643.800	57087	88.67	-3		20
3,5-Dichlorobenzo	10.387	10.366	10.408	93.1	677.700	57049	84.19	-10		20
4-Nitrophenol	11.273	11.253	11.293	90.8	309.000	28791	93.18	3		20
Dicamba	12.193	12.170	12.216	94.0	1344.6	116384	86.56	-8		20
MCPP	12.280	12.257	12.303	4693.0	2.160	9531	4411.23	-6		20
MCPA	12.790	12.768	12.812	4673.0	5.070	22071	4349.65	-7		20
Dichloroprop	13.147	13.125	13.169	94.3	508.200	42953	84.53	-10		20
2,4-D	13.713	13.686	13.740	94.0	598.700	51062	85.29	-9		20
Pentachlorophenol	14.433	14.406	14.460	95.0	4844.7	448736	92.62	-2		20
2,4,5-TP(Silvex)	14.583	14.562	14.604	95.0	1957.3	170789	87.26	-8		20
Chloramben	15.490	15.468	15.512	93.6	1388.7	119084	85.75	-8		20
2,4,5-T	15.227	15.205	15.249	94.8	2001.7	177917	88.88	-6		20
2,4-DB	15.817	15.796	15.838	94.7	340.000	28915	85.03	-10		20
Dinoseb	15.643	15.622	15.664	94.5	1048.6	110288	105.17	11		20
Bentazon	16.730	16.709	16.751	94.5	217.100	17711	81.58	-14		20
Dacthal	17.003	16.982	17.024	91.5	2312.0	199098	86.11	-6		20
Picloram	17.523	17.502	17.544	94.5	2085.2	196637	94.30	-0		20
Acifluorfen	19.217	19.196	19.238	96.3	1107.4	131422	118.68	23	*	20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	12.023	12.000	12.046	935.8	382.900	319343	834.07	-11		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19015B 02/19/2016 21:25
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.880	2.864	2.896	91.0	618.400	56805	91.85	1		20
3,5-Dichlorobenzo	7.913	7.892	7.934	93.1	757.100	67818	89.58	-4		20
4-Nitrophenol	8.710	8.679	8.741	90.8	430.600	43010	99.89	10		20
Dicamba	9.620	9.596	9.644	94.0	1561.1	137718	88.22	-6		20
MCPP	9.800	9.779	9.821	4693.0	2.520	13082	5182.05	10		20
MCPA	10.107	10.083	10.131	4673.0	5.090	25713	5053.77	8		20
Dichloroprop	10.537	10.511	10.563	94.3	564.100	51485	91.27	-3		20
2,4-D	10.930	10.908	10.952	94.0	706.500	64638	91.50	-3		20
Pentachlorophenol	11.390	11.366	11.414	95.0	5597.4	512206	91.51	-4		20
2,4,5-TP(Silvex)	11.890	11.866	11.914	95.0	2321.6	218919	94.29	-1		20
Chloramben	12.353	12.327	12.379	93.6	2616.0	241223	92.21	-1		20
2,4,5-T	12.340	12.316	12.364	94.8	1649.5	156394	94.81	0		20
2,4-DB	12.943	12.917	12.969	94.7	401.900	36440	90.67	-4		20
Dinoseb	13.247	13.223	13.271	94.5	1494.1	154012	103.08	9		20
Bentazon	13.810	13.783	13.837	94.5	305.500	28740	94.06	-0		20
Dacthal	14.230	14.203	14.257	91.5	2450.6	226411	92.39	1		20
Picloram	14.277	14.251	14.303	94.5	3490.1	328048	93.99	-1		20
Acifluorfen	16.500	16.476	16.524	96.3	1644.2	176282	107.21	11		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.383	9.359	9.407	935.8	385.500	332597	862.69	-8		20

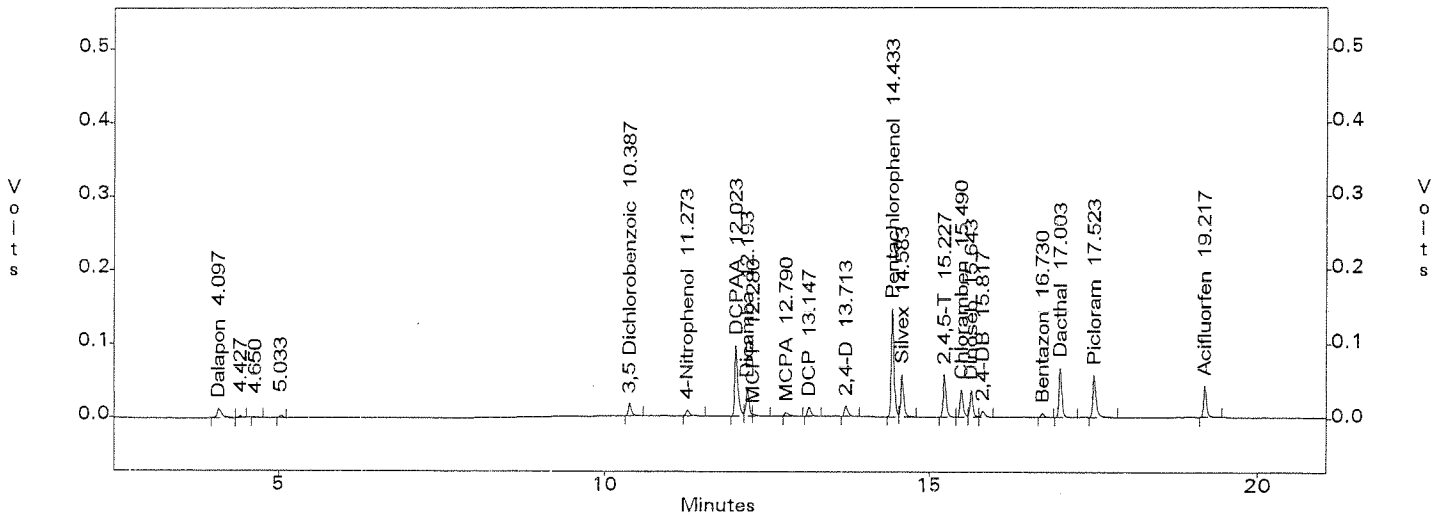
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.015
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17050
Acquired : Feb 19, 2016 21:25:32
Printed : Feb 22, 2016 08:56:33
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.097	57087.0	643.80	88.672	BV
3,5 Dichlorobenzoic	10.387	57049.0	677.65	84.186	BV
4-Nitrophenol	11.273	28791.0	308.97	93.184	BB
DCPAA	12.023	319343.0	382.88	834.065	BV
Dicamba	12.193	116384.0	1344.60	86.557	Vx
MCPP	12.280	9531.0	2.16	4411.232	xV
MCPA	12.790	22071.0	5.07	4349.654	Bx
DCP	13.147	42953.0	508.17	84.525	vv
2,4-D	13.713	51062.0	598.69	85.290	VB
Pentachlorophenol	14.433	448736.0	4844.71	92.624	BV
Silvex	14.583	170789.0	1957.30	87.257	VI
2,4,5-T	15.227	177917.0	2001.68	88.884	BV
Chloramben	15.490	119084.0	1388.68	85.753	VV
Dinoseb	15.643	110288.0	1048.62	105.174	VV
2,4-DB	15.817	28915.0	340.05	85.032	VV
Bentazon	16.730	17711.0	217.11	81.576	Bx
Dacthal	17.003	199098.0	2312.00	86.115	VV
Picloram	17.523	196637.0	2085.24	94.300	VB
Acifluorfen	19.217	131422.0	1107.39	118.678	vv

c:\ezchrom\chrom\wb19\wb19.015 -- Channel A



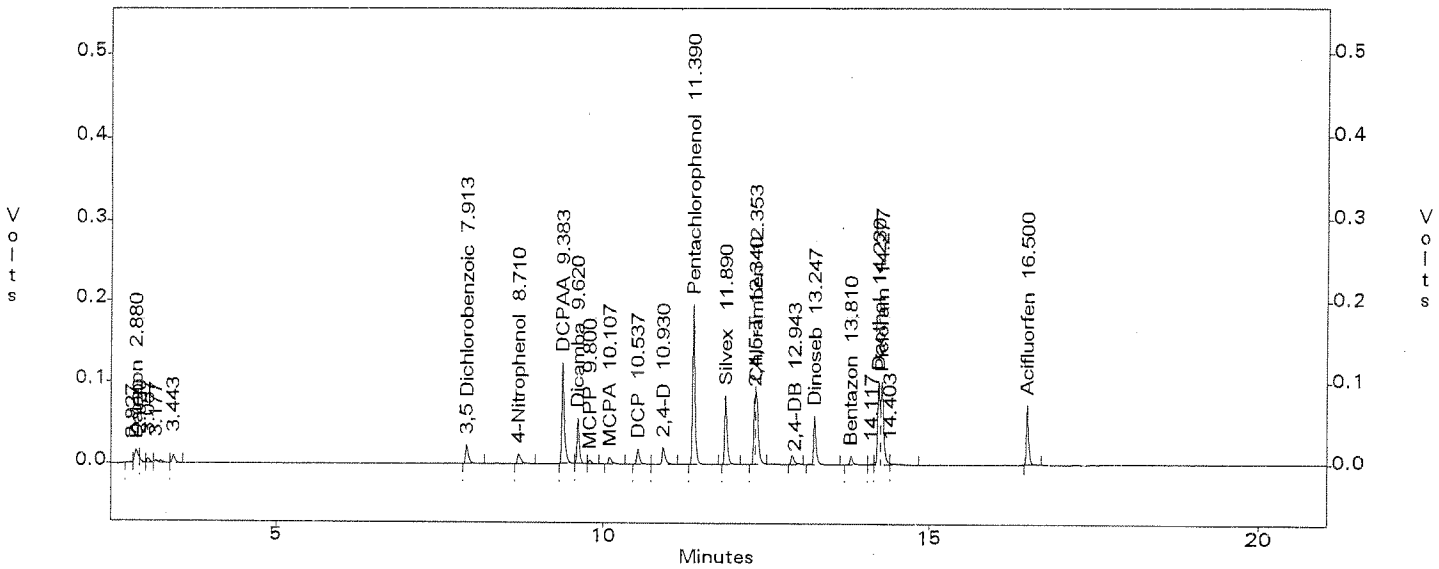
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.015
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17050
Acquired : Feb 19, 2016 21:25:32
Printed : Feb 22, 2016 08:56:33
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.880	56805.0	618.45	91.851	xx
3,5 Dichlorobenzoic	7.913	67818.0	757.07	89.579	BV
4-Nitrophenol	8.710	43010.0	430.56	99.894	BV
DCPAA	9.383	332597.0	385.54	862.689	BV
Dicamba	9.620	137718.0	1561.07	88.220	VV
MCPP	9.800	13082.0	2.52	5182.053	vv
MCPA	10.107	25713.0	5.09	5053.769	xB
DCP	10.537	51485.0	564.08	91.273	BV
2,4-D	10.930	64638.0	706.46	91.496	VV
Pentachlorophenol	11.390	512206.0	5597.35	91.509	VV
Silvex	11.890	218919.0	2321.63	94.295	vv
2,4,5-T	12.340	156394.0	1649.51	94.812	Bx
Chloramben	12.353	241223.0	2615.99	92.211	xx
2,4-DB	12.943	36440.0	401.89	90.671	vv
Dinoseb	13.247	154012.0	1494.07	103.082	SV
Bentazon	13.810	28740.0	305.54	94.064	vv
Dacthal	14.230	226411.0	2450.60	92.390	xx
Picloram	14.277	328048.0	3490.13	93.993	xx
Acifluorfen	16.500	176282.0	1644.22	107.213	BB

c:\ezchrom\chrom\wb19\wb19.015 -- Channel B



CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19017A 02/22/2016 12:17
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.067	4.051	4.083	91.0	643.800	58066	90.19	-1		20
3,5-Dichlorobenzo	10.333	10.312	10.354	93.1	677.700	63655	93.93	1		20
4-Nitrophenol	11.220	11.200	11.240	90.8	309.000	29981	97.04	7		20
Dicamba	12.140	12.117	12.163	94.0	1344.6	129852	96.57	3		20
MCPP	12.227	12.204	12.250	4693.0	2.160	10984	5083.72	8		20
MCPA	12.733	12.711	12.755	4673.0	5.070	24303	4789.53	2		20
Dichloroprop	13.090	13.068	13.112	94.3	508.200	47474	93.42	-1		20
2,4-D	13.657	13.630	13.684	94.0	598.700	54319	90.73	-3		20
Pentachlorophenol	14.373	14.346	14.400	95.0	4844.7	506728	104.59	10		20
2,4,5-TP(Silvex)	14.523	14.502	14.544	95.0	1957.3	193995	99.11	4		20
Chloramben	15.430	15.408	15.452	93.6	1388.7	131333	94.57	1		20
2,4,5-T	15.167	15.145	15.189	94.8	2001.7	192056	95.95	1		20
2,4-DB	15.757	15.736	15.778	94.7	340.000	29352	86.32	-9		20
Dinoseb	15.583	15.562	15.604	94.5	1048.6	103520	98.72	4		20
Bentazon	16.667	16.646	16.688	94.5	217.100	20046	92.33	-2		20
Dacthal	16.940	16.919	16.961	91.5	2312.0	225467	97.52	7		20
Picloram	17.463	17.442	17.484	94.5	2085.2	179913	86.28	-9		20
Acifluorfen	19.157	19.136	19.178	96.3	1107.4	96403	87.06	-10		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	11.970	11.947	11.993	935.8	382.900	353597	923.53	-1		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19017B 02/22/2016 12:17
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.860	2.844	2.876	91.0	618.400	60183	97.31	7		20
3,5-Dichlorobenzo	7.870	7.849	7.891	93.1	757.100	75487	99.71	7		20
4-Nitrophenol	8.667	8.636	8.698	90.8	430.600	44766	103.97	14		20
Dicamba	9.577	9.553	9.601	94.0	1561.1	156115	100.00	6		20
MCPP	9.757	9.736	9.778	4693.0	2.520	13229	5240.28	12		20
MCPA	10.060	10.036	10.084	4673.0	5.090	26468	5202.16	11		20
Dichloroprop	10.493	10.467	10.519	94.3	564.100	58285	103.33	10		20
2,4-D	10.887	10.865	10.909	94.0	706.500	68822	97.42	4		20
Pentachlorophenol	11.343	11.319	11.367	95.0	5597.4	567488	101.39	7		20
2,4,5-TP(Silvex)	11.843	11.819	11.867	95.0	2321.6	242340	104.38	10		20
Chloramben	12.307	12.281	12.333	93.6	2616.0	268745	102.73	10		20
2,4,5-T	12.293	12.269	12.317	94.8	1649.5	158451	96.06	1		20
2,4-DB	12.857	12.831	12.883	94.7	401.900	39378	97.98	4		20
Dinoseb	13.200	13.176	13.224	94.5	1494.1	157258	105.25	11		20
Bentazon	13.763	13.736	13.790	94.5	305.500	29288	95.86	1		20
Dacthal	14.180	14.153	14.207	91.5	2450.6	251977	102.82	12		20
Picloram	14.230	14.204	14.256	94.5	3490.1	307742	88.18	-7		20
Acifluorfen	16.453	16.429	16.477	96.3	1644.2	138633	84.32	-12		20

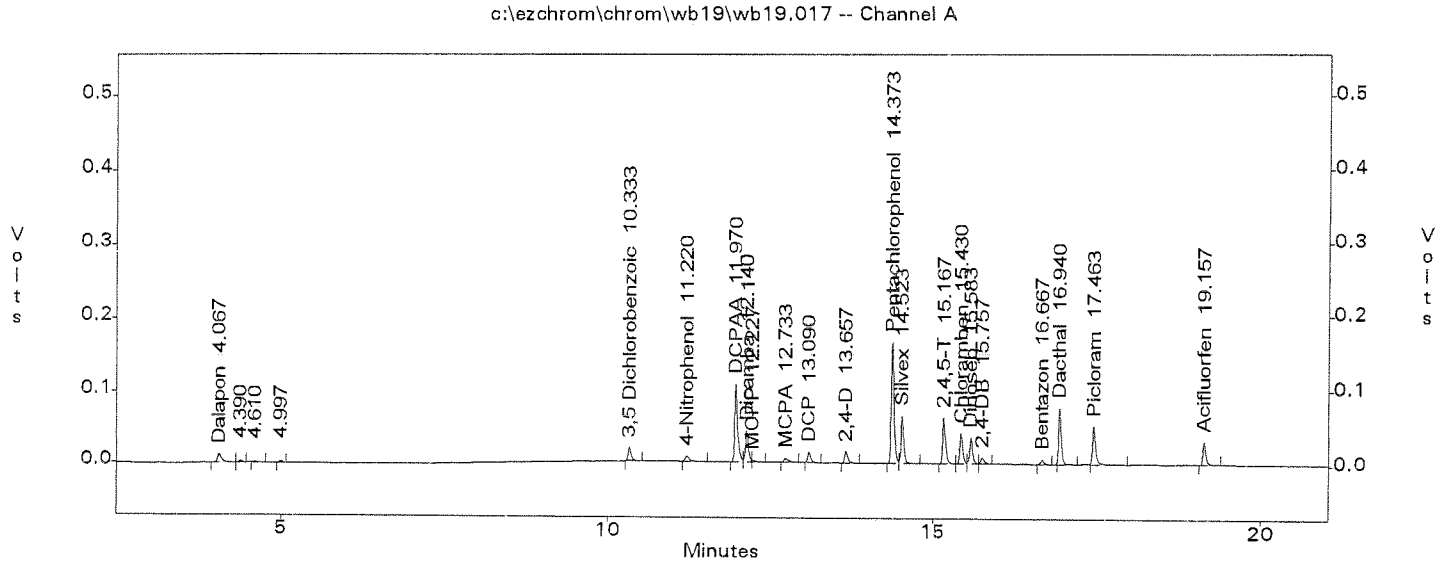
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.343	9.319	9.367	935.8	385.500	367859	954.15	2		20

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.017
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17051
Acquired : Feb 22, 2016 12:17:58
Printed : Feb 22, 2016 12:55:33
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.067	58066.0	643.80	90.193	BV
3,5 Dichlorobenzoic	10.333	63655.0	677.65	93.935	BV
4-Nitrophenol	11.220	29981.0	308.97	97.036	BV
DCPAA	11.970	353597.0	382.88	923.530	BV
Dicamba	12.140	129852.0	1344.60	96.573	Vx
MCPP	12.227	10984.0	2.16	5083.724	xx
MCPA	12.733	24303.0	5.07	4789.527	BV
DCP	13.090	47474.0	508.17	93.422	vv
2,4-D	13.657	54319.0	598.69	90.730	VB
Pentachlorophenol	14.373	506728.0	4844.71	104.594	BV
Silvex	14.523	193995.0	1957.30	99.114	VI
2,4,5-T	15.167	192056.0	2001.68	95.948	BV
Chloramben	15.430	131333.0	1388.68	94.574	VV
Dinoseb	15.583	103520.0	1048.62	98.720	VV
2,4-DB	15.757	29352.0	340.05	86.317	VV
Bentazon	16.667	20046.0	217.11	92.331	VV
Dacthal	16.940	225467.0	2312.00	97.520	xV
Picloram	17.463	179913.0	2085.24	86.279	xV
Acifluorfen	19.157	96403.0	1107.39	87.055	vv

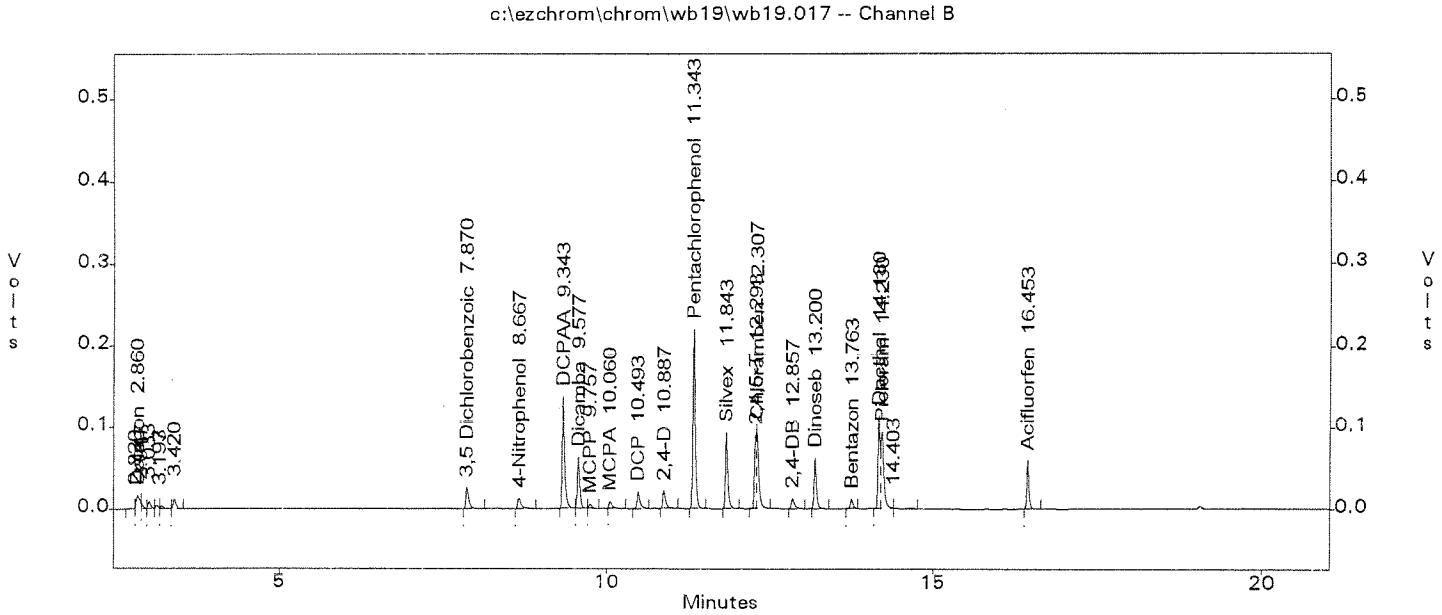


EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.017
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17051
Acquired : Feb 22, 2016 12:17:58
Printed : Feb 22, 2016 12:55:33
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	60183.0	618.45	97.313	xx
3,5 Dichlorobenzoic	7.870	75487.0	757.07	99.709	BV
4-Nitrophenol	8.667	44766.0	430.56	103.972	BV
DCPAA	9.343	367859.0	385.54	954.152	BV
Dicamba	9.577	156115.0	1561.07	100.005	VV
MCPP	9.757	13229.0	2.52	5240.282	vv
MCPA	10.060	26468.0	5.09	5202.160	xB
DCP	10.493	58285.0	564.08	103.328	BI
2,4-D	10.887	68822.0	706.46	97.418	BB
Pentachlorophenol	11.343	567488.0	5597.35	101.385	BI
Silvex	11.843	242340.0	2321.63	104.384	vv
2,4,5-T	12.293	158451.0	1649.51	96.059	Bx
Chloramben	12.307	268745.0	2615.99	102.732	xx
2,4-DB	12.857	39378.0	401.89	97.981	vv
Dinoseb	13.200	157258.0	1494.07	105.255	BV
Bentazon	13.763	29288.0	305.54	95.858	vv
Dacthal	14.180	251977.0	2450.60	102.822	Bx
Picloram	14.230	307742.0	3490.13	88.175	xx
Acifluorfen	16.453	138633.0	1644.22	84.315	BB



CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19022A 02/22/2016 15:14
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.063	4.047	4.079	91.0	643.800	55004	85.44	-6		20
3,5-Dichlorobenzo	10.327	10.306	10.348	93.1	677.700	64875	95.74	3		20
4-Nitrophenol	11.210	11.190	11.230	90.8	309.000	30407	98.41	8		20
Dicamba	12.130	12.107	12.153	94.0	1344.6	130652	97.17	3		20
MCPP	12.220	12.197	12.243	4693.0	2.160	10314	4773.63	2		20
MCPA	12.727	12.705	12.749	4673.0	5.070	24742	4876.04	4		20
Dichloroprop	13.080	13.058	13.102	94.3	508.200	46821	92.14	-2		20
2,4-D	13.650	13.623	13.677	94.0	598.700	55337	92.43	-2		20
Pentachlorophenol	14.367	14.340	14.394	95.0	4844.7	503431	103.91	9		20
2,4,5-TP(Silvex)	14.517	14.496	14.538	95.0	1957.3	192665	98.43	4		20
Chloramben	15.420	15.398	15.442	93.6	1388.7	128411	92.47	-1		20
2,4,5-T	15.160	15.138	15.182	94.8	2001.7	197136	98.49	4		20
2,4-DB	15.750	15.729	15.771	94.7	340.000	29695	87.33	-8		20
Dinoseb	15.577	15.556	15.598	94.5	1048.6	110654	105.52	12		20
Bentazon	16.657	16.636	16.678	94.5	217.100	19938	91.83	-3		20
Dacthal	16.933	16.912	16.954	91.5	2312.0	225820	97.67	7		20
Picloram	17.453	17.432	17.474	94.5	2085.2	208201	99.85	6		20
Acifluorfen	19.147	19.126	19.168	96.3	1107.4	134623	121.57	26	*	20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	11.963	11.940	11.986	935.8	382.900	349996	914.13	-2		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19022B 02/22/2016 15:14
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.860	2.844	2.876	91.0	618.400	62007	100.26	10		20
3,5-Dichlorobenzo	7.867	7.846	7.888	93.1	757.100	74466	98.36	6		20
4-Nitrophenol	8.703	8.672	8.734	90.8	430.600	44423	103.18	14		20
Dicamba	9.570	9.546	9.594	94.0	1561.1	154518	98.98	5		20
MCPP	9.750	9.729	9.771	4693.0	2.520	13593	5384.47	20		20
MCPA	10.057	10.033	10.081	4673.0	5.090	26365	5181.92	11		20
Dichloroprop	10.490	10.464	10.516	94.3	564.100	58619	103.92	10		20
2,4-D	10.880	10.858	10.902	94.0	706.500	71285	100.90	7		20
Pentachlorophenol	11.337	11.313	11.361	95.0	5597.4	562752	100.54	6		20
2,4,5-TP(Silvex)	11.837	11.813	11.861	95.0	2321.6	243108	104.71	10		20
Chloramben	12.303	12.277	12.329	93.6	2616.0	273135	104.41	12		20
2,4,5-T	12.287	12.263	12.311	94.8	1649.5	163823	99.32	5		20
2,4-DB	12.850	12.824	12.876	94.7	401.900	40572	100.95	7		20
Dinoseb	13.193	13.169	13.217	94.5	1494.1	163317	109.31	16		20
Bentazon	13.757	13.730	13.784	94.5	305.500	32303	105.73	12		20
Dacthal	14.173	14.146	14.200	91.5	2450.6	245514	100.18	9		20
Picloram	14.220	14.194	14.246	94.5	3490.1	360515	103.30	9		20
Acifluorfen	16.447	16.423	16.471	96.3	1644.2	182541	111.02	20		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.337	9.313	9.361	935.8	385.500	366375	950.30	2		20

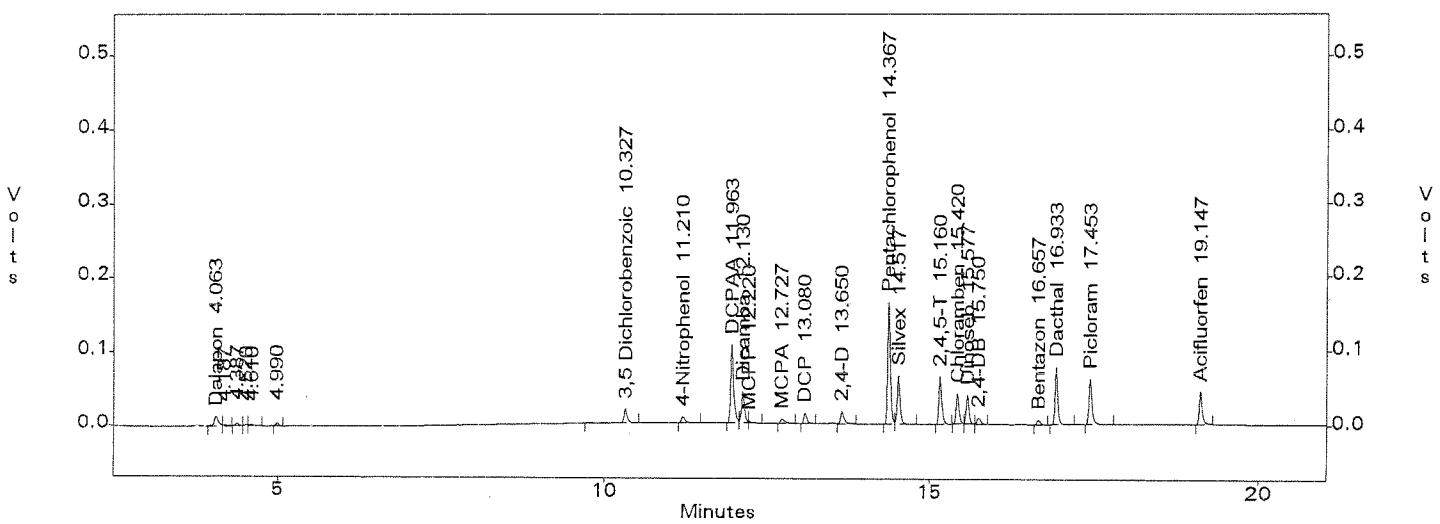
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.022
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : CHE16L17052
Acquired : Feb 22, 2016 15:14:05
Printed : Feb 22, 2016 16:20:27
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.063	55004.0	643.80	85.437	BV
3,5 Dichlorobenzoic	10.327	64875.0	677.65	95.735	VV
4-Nitrophenol	11.210	30407.0	308.97	98.414	BB
DCPAA	11.963	349996.0	382.88	914.125	BV
Dicamba	12.130	130652.0	1344.60	97.168	Vx
MCPP	12.220	10314.0	2.16	4773.628	xx
MCPA	12.727	24742.0	5.07	4876.043	VV
DCP	13.080	46821.0	508.17	92.137	vv
2,4-D	13.650	55337.0	598.69	92.431	VB
Pentachlorophenol	14.367	503431.0	4844.71	103.914	BV
Silvex	14.517	192665.0	1957.30	98.434	VI
2,4,5-T	15.160	197136.0	2001.68	98.485	BV
Chloramben	15.420	128411.0	1388.68	92.470	VV
Dinoseb	15.577	110654.0	1048.62	105.523	vv
2,4-DB	15.750	29695.0	340.05	87.326	VV
Bentazon	16.657	19938.0	217.11	91.834	BV
Dacthal	16.933	225820.0	2312.00	97.673	VV
Picloram	17.453	208201.0	2085.24	99.845	VB
Acifluorfen	19.147	134623.0	1107.39	121.568	vv

c:\ezchrom\chrom\wb19\wb19.022 -- Channel A

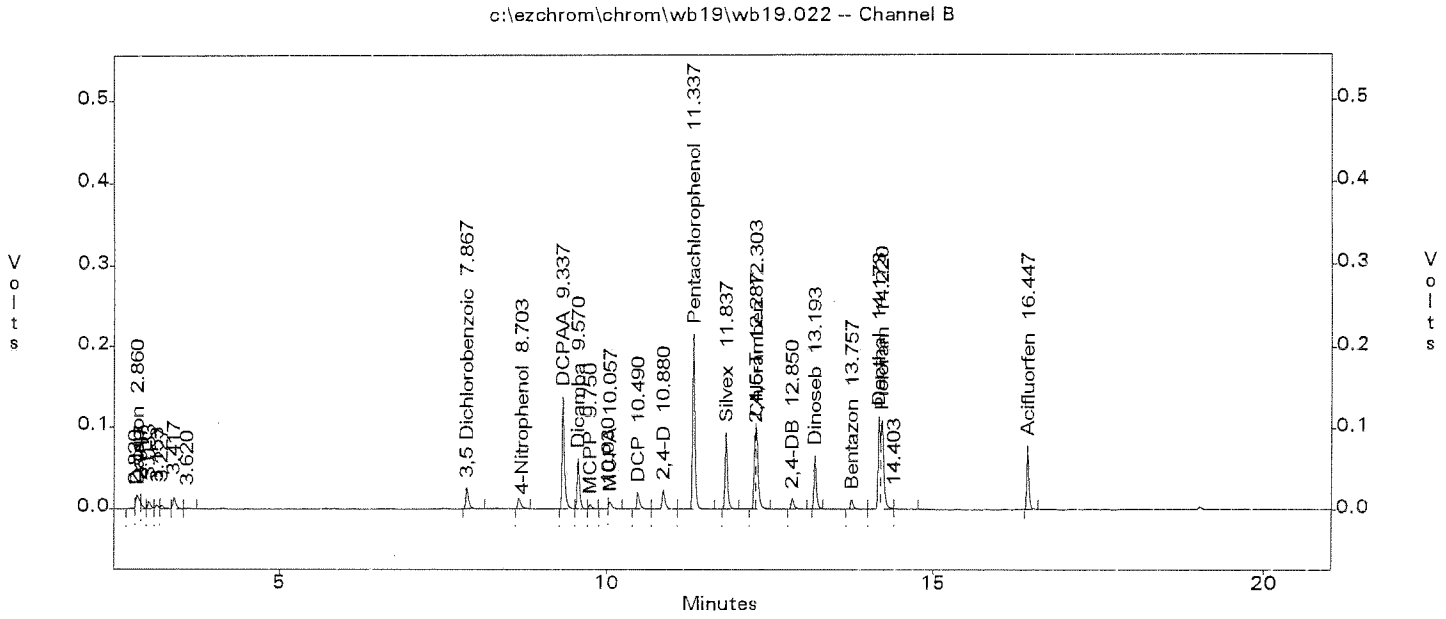


EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.022
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17052
Acquired : Feb 22, 2016 15:14:05
Printed : Feb 22, 2016 16:20:28
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	62007.0	618.45	100.262	xx
3,5 Dichlorobenzoic	7.867	74466.0	757.07	98.361	BV
4-Nitrophenol	8.703	44423.0	430.56	103.176	BS
DCPAA	9.337	366375.0	385.54	950.302	BV
Dicamba	9.570	154518.0	1561.07	98.982	VV
MCPP	9.750	13593.0	2.52	5384.470	vv
MCPA	10.057	26365.0	5.09	5181.916	xV
DCP	10.490	58619.0	564.08	103.920	VV
2,4-D	10.880	71285.0	706.46	100.905	VV
Pentachlorophenol	11.337	562752.0	5597.35	100.539	VB
Silvex	11.837	243108.0	2321.63	104.714	vv
2,4,5-T	12.287	163823.0	1649.51	99.316	Bx
Chloramben	12.303	273135.0	2615.99	104.410	xx
2,4-DB	12.850	40572.0	401.89	100.952	vv
Dinoseb	13.193	163317.0	1494.07	109.310	BI
Bentazon	13.757	32303.0	305.54	105.726	vv
Dacthal	14.173	245514.0	2450.60	100.185	Vx
Picloram	14.220	360515.0	3490.13	103.296	xx
Acifluorfen	16.447	182541.0	1644.22	111.020	BI



ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PCB CONGENERS/HERBICIDES/EDB and DBCP

Note: For samples and relevant QC/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	A16-026
Instrument No.:	16
Analytical Sequence:	WL17
Method File:	HE16L17
Anlytical Batch:	WL17012

SOP #	Rev. #
☑ EMAX-8151	4
☐ EMAX-8082CON	1
☐ EMAX-504.1	4
☐ EMAX-	

ICAL REFERENCE

ICAL ID	BATCH	DATE
HE16L17	WL17	12/17/15

STANDARDS ID		Conc (µg/L)
DCC	SS4B-03-79-02	100/5000/1000
ICAL	79-01	10/500/100-200/2000/2
ICV	79-03	100/10,000
		50/5000

Hexane Lot # SH297

Column	☑ A. ZB-35HT B. RTX CLPEST II

ELECTRONIC DATA ARCHIVAL

Location	Date
☑ EZC_4_Pesticides	
☐	

Analyzed By: [illegible] Date: 12/17/15

Disposed By: [illegible] Date Disposed: 12/18/15

This page is checked during data review.

Syringe Lot #: ☑ 430353 ☐ 454251 ☐ 475284 ☐ 354311

Run	Sample ID	Method	Filename	Mult.	Description
1	IB16L17001	he16l17.met	WL17.001	1	
2	HE16L178	he16l17.met	WL17.002	1	
3	HE16L177	he16l17.met	WL17.003	1	
4	HE16L176	he16l17.met	WL17.004	1	
5	HE16L175	he16l17.met	WL17.005	1	
6	HE16L174	he16l17.met	WL17.006	1	
7	HE16L173	he16l17.met	WL17.007	1	
8	HE16L172	he16l17.met	WL17.008	1	
9	HE16L171	he16l17.met	WL17.009	1	
10	IHE16L17001	he16l17.met	WL17.010	1	
11	IHE16L17002	he16l17.met	WL17.011	1	
12	CHE16L17001	he16l17.met	WL17.012	1	
13	HEL005WB	he16l17.met	WL17.013	1	
14	HEL005WL	he16l17.met	WL17.014	1	
15	HEL005WC	he16l17.met	WL17.015	1	
16	L527-01I DF=5	he16l17.met	WL17.016	5	
17	L527-01J DF=2	he16l17.met	WL17.017	2	
18	RINSE	he16l17.met	WL17.018	1	
19	IB16L17002	he16l17.met	WL17.019	1	
20	CHE16L17002	he16l17.met	WL17.020	1	

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PCB CONGENERS/HERBICIDES/EDB and DBCP

Note: For samples and relevant QC/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	A16-027
Instrument No.:	16
Analytical Sequence:	WB19
Method File:	HE1647
Anlytical Batch:	WB19002

SOP #	Rev. #
☑ EMAX-8151	5
☐ EMAX-8082CON	1
☐ EMAX-504.1	4
☐ EMAX-	

ICAL REFERENCE

ICAL ID	BATCH	DATE
HE1647	WL17	12/17/15

STANDARDS ID		Conc (µg/L)
DCC	SS4B-03-80-02	100/5000/1000

Hexane Lot # 55148

Column	☑ A. ZB-35HT B. RTX CLPEST II

ELECTRONIC DATA ARCHIVAL

Location	Date
☑ EZC_4_Pesticides	
☐	

Analyzed By: [illegible] Date: 2/19/16

Disposed By: [illegible] Date Disposed: 2/22/16

This page is checked during data review.

Syringe Lot #: ☑ 430353 ☐ 454251 ☐ 475284 ☐ 354311

Run	Sample ID	Method	Filename	Mult.	Description
1	IB16L17049	he16l17.met	WB19.001	1	
2	CHE16L17049	he16l17.met	WB19.002	1	
3	HEB007WB ✗	he16l17.met	WB19.003	1	dried out
4	HEB007WL ✗	he16l17.met	WB19.004	1	dried out
5	HEB007WC	he16l17.met	WB19.005	1	
6	TXB005SB	he16l17.met	WB19.006	1	
7	B094-02	he16l17.met	WB19.007	1	
8	B113-02	he16l17.met	WB19.008	1	
9	B113-03	he16l17.met	WB19.009	1	
10	B094-03K DF=50	he16l17.met	WB19.010	50	
11	B094-03T DF=100	he16l17.met	WB19.011	100	
12	HEB007WL	he16l17.met	WB19.012	1	
13	RINSE	he16l17.met	WB19.013	1	
14	IB16L17050	he16l17.met	WB19.014	1	
15	CHE16L17050	he16l17.met	WB19.015	1	
16	IB16L17051	he16l17.met	WB19.016	1	
17	CHE16L17051	he16l17.met	WB19.017	1	
18	HEB007WB	he16l17.met	WB19.018	1	
19	B094-03J DF=10	he16l17.met	WB19.019	10	
20	RINSE	he16l17.met	WB19.020	1	
21	IB16L17052	he16l17.met	WB19.021	1	
22	CHE16L17052	he16l17.met	WB19.022	1	
23	HEB001WB	he16l17.met	WB19.023	1	
24	HEB001WL	he16l17.met	WB19.024	1	

Run	Sample ID	Method	Filename	Mult.	Description
22	CHE16L17052	he16l17.met	WB19.022	1	
23	HEB001WB	he16l17.met	WB19.023	1	
24	HEB001WL	he16l17.met	WB19.024	1	
25	HEB001WC	he16l17.met	WB19.025	1	
26	HEB001WX	he16l17.met	WB19.026	1	
27	HEB001WY	he16l17.met	WB19.027	1	
28	IB16L17053	he16l17.met	WB19.028	1	
29	CHE16L17053	he16l17.met	WB19.029	1	

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG *for* HERBICIDES

SOP	Rev. #
☑ EMAX-8151	4
☐ EMAX-	

Note: For samples, relevant QCs/Standards extracted, refer to attached extraction sequence.

Comments:

Emulsion was observed in sample B094-03, my 2/17/16

Book #.: EHE-020

Preparation Batch: HEB007 W

Matrix: Water / TCLP Extract

Micropipette ID: PE00-03 (1000 ul)

Micropipette ID: PE97C-03 (100 ul)

Standards	ID	Amount Added (ml)
Surrogate	SS4B-03-10-03	1.0
LCS/MS	SS4A-02-155	0.1

Reagent	Lot # / ID
CH_2Cl_2	–
Hexane	SW1A-005-16-01
Ethyl Ether	SW1A-005-16-05
Acified Na_2SO_4	SP1B-08-55-02
H_2SO_4	3113122
Diazo-methane	SP1B-08-56-03
Silica Sand	–
Silicic Acid	SP1A-07-01-15
Reagent Water	SW1A-005
Residual Chlorine Strip	5190
pH Strip	HC573149

Lab Sample ID	Sonicator #	Concentrator #
HEB007 -WB	N/A	1
-WL	↓	1
-WC		1
B094 -03		2
B113 -02		2
-03		2
TxB005 -SB		1
B094 -02		2

TUNING

Sonicator #	Reading

Concentrator	Water Bath Temperature Setting(°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		

Test Thermometer = SVOC-T1

Prepared By: my Standard Added By: my

Witnessed By: ML Checked By: ML

Extract Received By: RZ Extract Location: SE04 # 04

Disposal Date: Disposed By:

842

FileID: HEB007W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR HERBICIDES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16HEB007W01	HEB007WB	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W02	HEB007WL	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W03	HEB007WC	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W04	B094-03	500	ml	2/17/16 13:58	5	500	5	1	opaque, light brown
16HEB007W05	B113-02	500	ml	2/17/16 13:58	5	500	5	1	clear, yellow
16HEB007W06	B113-03	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W07	TXB005SB	10	ml	2/17/16 13:58	5	500	5	50	TCLP Extract
16HEB007W08	B094-02	10	ml	2/17/16 13:58	5	500	5	50	TCLP Extract

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 2/17/16 13:59

☑ Extraction Ended @ 2/17/16 16:26

Prepared By: MYokoo

Checked By: ML

Date 2/17/16

Comments:

SOP EMAX-8151 Rev. 5

TCLP HERBICIDES

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/19/16 16:54
Lab Samp ID:	B094-02	Dilution Factor:	50
Lab File ID:	WB19007A	Matrix :	LEACHATE
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19002A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	20	5.0	10
2,4,5-TP (SILVEX)	(ND)|ND	20	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	323.3|(336.1)	500.0	64.7|(67.2)	50-130

DateTime Leached: 02/16/16 17:30

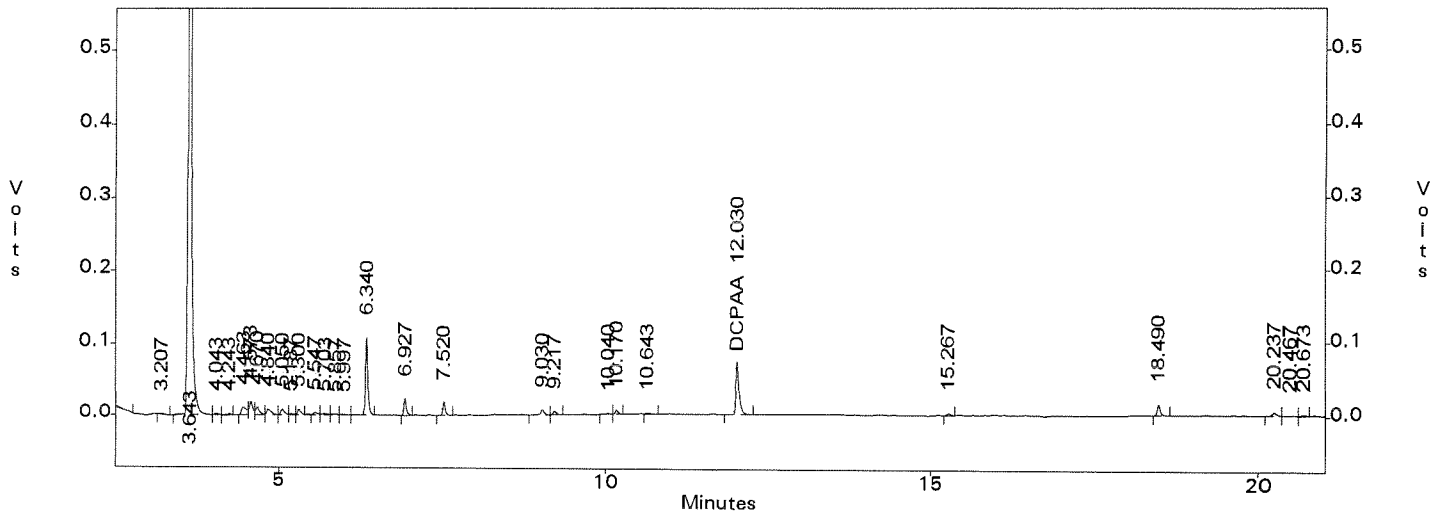
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.007
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : B094-02
Acquired : Feb 19, 2016 16:54:51
Printed : Feb 22, 2016 08:52:25
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	10.397	0.0	0.00	0.000	--
4-Nitrophenol	11.283	0.0	0.00	0.000	--
DCPAA	12.030	247546.0	382.88	646.544	Vx
Dicamba	12.203	0.0	0.00	0.000	--
MCPP	12.290	0.0	0.00	0.000	--
MCPA	12.797	0.0	0.00	0.000	--
DCP	13.153	0.0	0.00	0.000	--
2,4-D	13.720	0.0	0.00	0.000	--
Pentachlorophenol	14.443	0.0	0.00	0.000	--
Silvex	14.590	0.0	0.00	0.000	--
2,4,5-T	15.233	0.0	0.00	0.000	--
Chloramben	15.497	0.0	0.00	0.000	--
Dinoseb	15.650	0.0	0.00	0.000	--
2,4-DB	15.823	0.0	0.00	0.000	--
Bentazon	16.737	0.0	0.00	0.000	--
Dacthal	17.010	0.0	0.00	0.000	--
Picloram	17.530	0.0	0.00	0.000	--
Acifluorfen	19.227	0.0	0.00	0.000	--

c:\ezchrom\chrom\wb19\wb19.007 -- Channel A



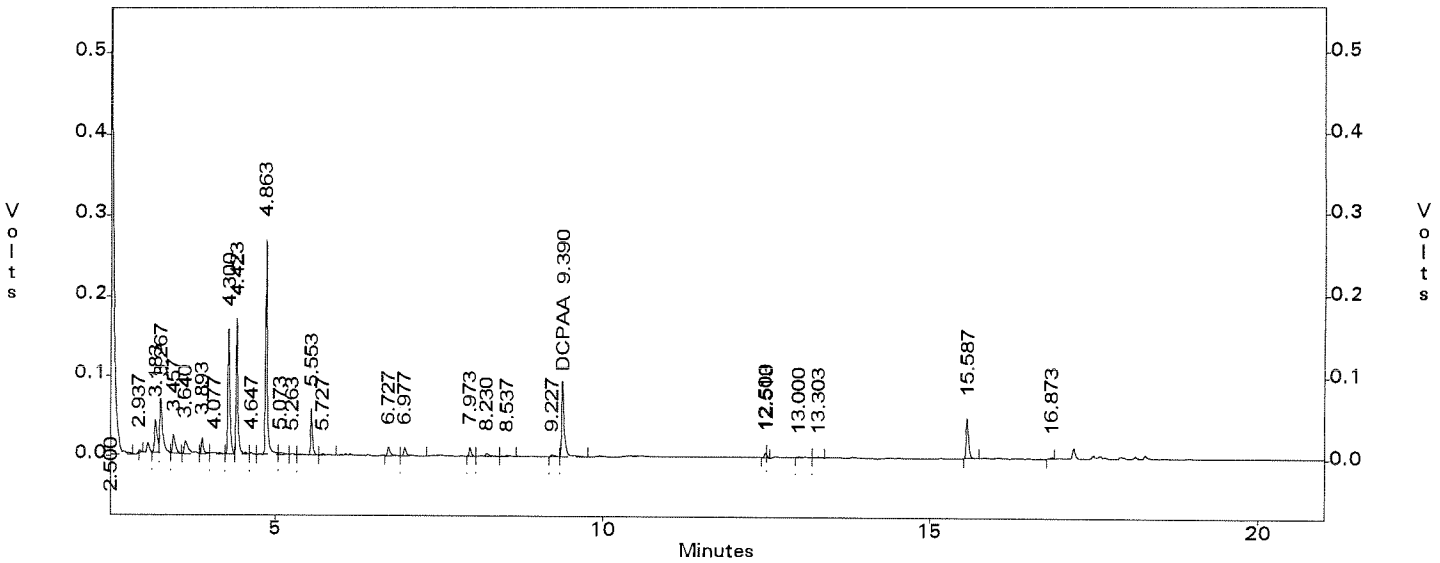
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.007
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : B094-02
Acquired : Feb 19, 2016 16:54:51
Printed : Feb 22, 2016 08:52:25
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.883	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	7.920	0.0	0.00	0.000	--
4-Nitrophenol	8.717	0.0	0.00	0.000	--
DCPAA	9.390	259165.0	385.54	672.221	VV
Dicamba	9.630	0.0	0.00	0.000	--
MCPP	9.807	0.0	0.00	0.000	--
MCPA	10.113	0.0	0.00	0.000	--
DCP	10.547	0.0	0.00	0.000	--
2,4-D	10.937	0.0	0.00	0.000	--
Pentachlorophenol	11.400	0.0	0.00	0.000	--
Silvex	11.897	0.0	0.00	0.000	--
2,4,5-T	12.340	0.0	0.00	0.000	--
Chloramben	12.363	0.0	0.00	0.000	--
2,4-DB	12.910	0.0	0.00	0.000	--
Dinoseb	13.257	0.0	0.00	0.000	--
Bentazon	13.820	0.0	0.00	0.000	--
Dacthal	14.237	0.0	0.00	0.000	--
Picloram	14.283	0.0	0.00	0.000	--
Acifluorfen	16.510	0.0	0.00	0.000	--

c:\ezchrom\chrom\wb19\wb19.007 -- Channel B



QC SUMMARIES

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	MBLK1W	Date Analyzed:	02/22/16 12:58
Lab Samp ID:	HEB007WB	Dilution Factor:	1
Lab File ID:	WB19018A	Matrix :	WATER
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19017A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	0.40	0.10	0.20
2,4,5-TP (SILVEX)	(ND)|ND	0.40	0.10	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	10.31|(10.52)	10.00	103|(105)	50-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/8151A

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	HEB007WB	HEB007WL	HEB007WC		
LAB FILE ID:	WB19018A	WB19012A	WB19005A		
DATE EXTRACTED:	02/17/1613:59	02/17/1613:59	02/17/1613:59	DATE COLLECTED:	NA
DATE ANALYZED:	02/22/1612:58	02/19/1619:44	02/19/1615:47	DATE RECEIVED:	02/17/16
PREP. BATCH:	HEB007W	HEB007W	HEB007W		
CALIB. REF:	WB19017A	WB19002A	WB19002A		

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 (%)
2,4-D	(ND) | ND	1.00	(1.00) | 0.957	(100) | 96	1.00	(0.982) | 0.933	(98) | 93	(2) | 3	35-115	30
2,4,5-TP (Silvex)	(ND) | ND	1.00	0.979 | (1.04)	98 | (104)	1.00	0.948 | (1.02)	95 | (102)	3 | (2)	50-115	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 (%)
2,4-DCPAA	10.00	9.926 | (9.941)	99.3 | (99.4)	10.00	(9.701) | 9.690	(97.0) | 96.9	50-130

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
Batch No.	: 16B094	Date Extracted:	02/17/16 13:59
Sample ID:	MBLK2W	Date Analyzed:	02/19/16 16:20
Lab Samp ID:	TXB005SB	Dilution Factor:	50
Lab File ID:	WB19006A	Matrix :	LEACHATE
Ext Btch ID:	HEB007W	% Moisture :	NA
Calib. Ref.:	WB19002A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	20	5.0	10
2,4,5-TP (SILVEX)	(ND)|ND	20	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	286.6|(298.8)	500.0	57.3|(59.8)	50-130

DateTime Leached: 02/16/16 17:30

QC DATA

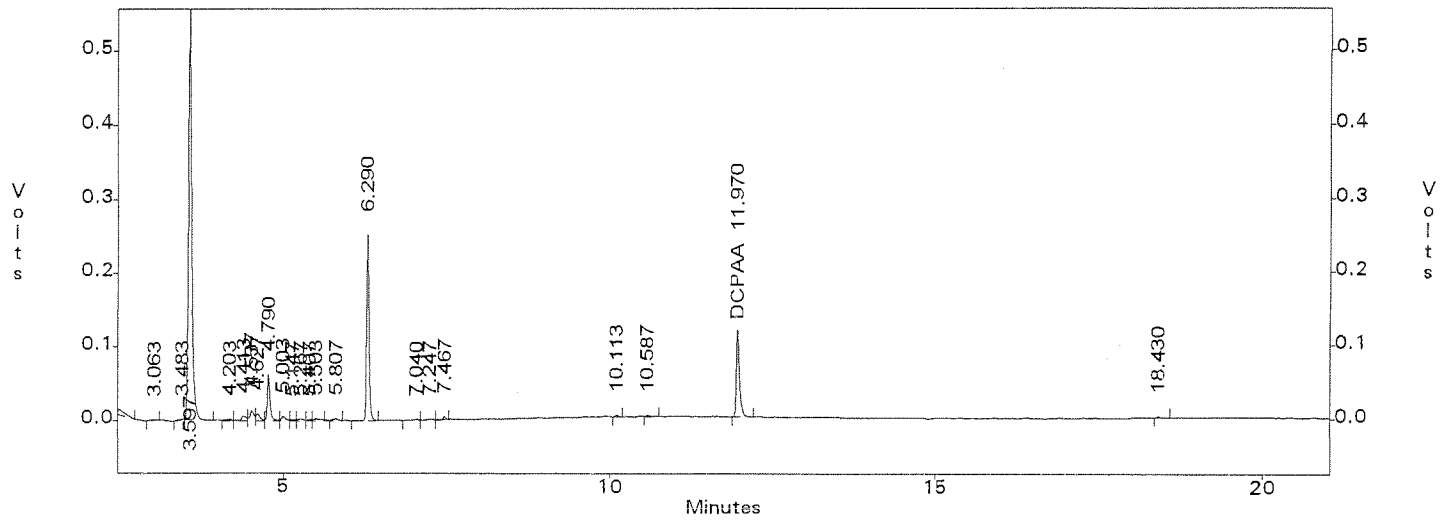
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.018
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WB
Acquired : Feb 22, 2016 12:58:24
Printed : Feb 22, 2016 14:09:05
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.067	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	10.333	0.0	0.00	0.000	--
4-Nitrophenol	11.220	0.0	0.00	0.000	--
DCPAA	11.970	394788.0	382.88	1031.113	Bx
Dicamba	12.140	0.0	0.00	0.000	--
MCPP	12.227	0.0	0.00	0.000	--
MCPA	12.733	0.0	0.00	0.000	--
DCP	13.090	0.0	0.00	0.000	--
2,4-D	13.657	0.0	0.00	0.000	--
Pentachlorophenol	14.373	0.0	0.00	0.000	--
Silvex	14.523	0.0	0.00	0.000	--
2,4,5-T	15.167	0.0	0.00	0.000	--
Chloramben	15.430	0.0	0.00	0.000	--
Dinoseb	15.583	0.0	0.00	0.000	--
2,4-DB	15.757	0.0	0.00	0.000	--
Bentazon	16.667	0.0	0.00	0.000	--
Dacthal	16.940	0.0	0.00	0.000	--
Picloram	17.463	0.0	0.00	0.000	--
Acifluorfen	19.157	0.0	0.00	0.000	--

c:\ezchrom\chrom\wb19\wb19.018 -- Channel A



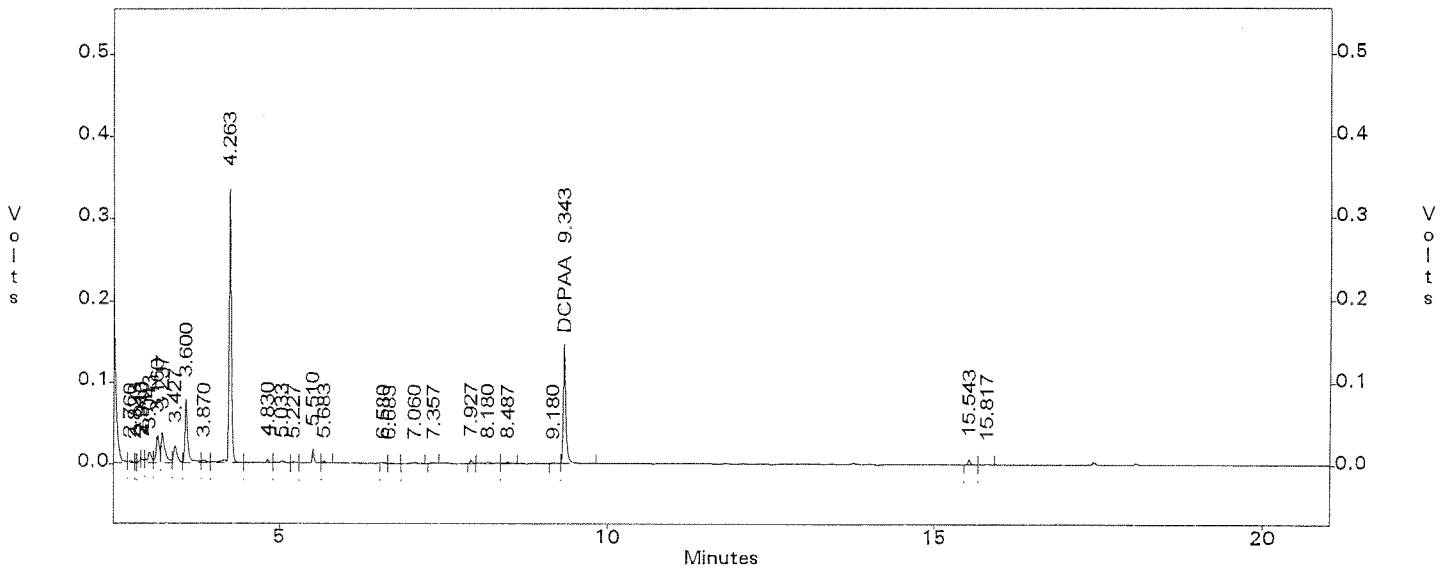
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.018
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WB
Acquired : Feb 22, 2016 12:58:24
Printed : Feb 22, 2016 14:09:05
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	7.870	0.0	0.00	0.000	--
4-Nitrophenol	8.667	0.0	0.00	0.000	--
DCPAA	9.343	405562.0	385.54	1051.946	VV
Dicamba	9.577	0.0	0.00	0.000	--
MCPP	9.757	0.0	0.00	0.000	--
MCPA	10.060	0.0	0.00	0.000	--
DCP	10.493	0.0	0.00	0.000	--
2,4-D	10.887	0.0	0.00	0.000	--
Pentachlorophenol	11.343	0.0	0.00	0.000	--
Silvex	11.843	0.0	0.00	0.000	--
2,4,5-T	12.293	0.0	0.00	0.000	--
Chloramben	12.307	0.0	0.00	0.000	--
2,4-DB	12.857	0.0	0.00	0.000	--
Dinoseb	13.200	0.0	0.00	0.000	--
Bentazon	13.763	0.0	0.00	0.000	--
Dacthal	14.180	0.0	0.00	0.000	--
Picloram	14.230	0.0	0.00	0.000	--
Acifluorfen	16.453	0.0	0.00	0.000	--

c:\ezchrom\chrom\wb19\wb19.018 -- Channel B



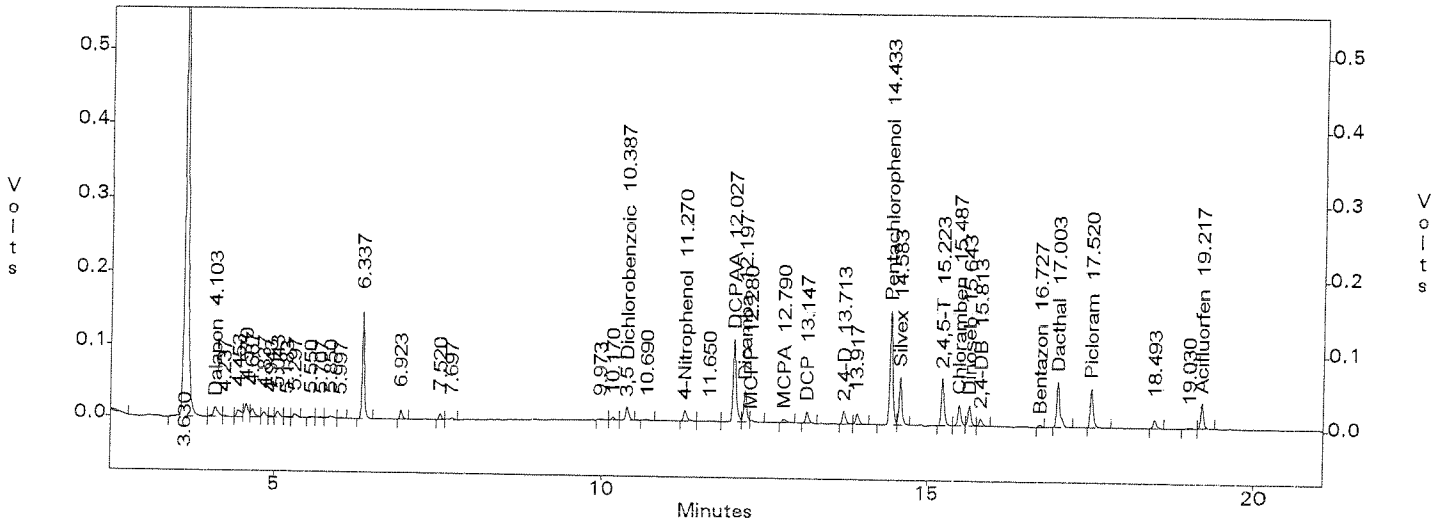
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.012
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WL
Acquired : Feb 19, 2016 19:44:05
Printed : Feb 22, 2016 09:15:42
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	59846.0	643.80	92.958	VV
3,5 Dichlorobenzoic	10.387	59541.0	677.65	87.864	VV
4-Nitrophenol	11.270	52548.0	308.97	170.075	BV
DCPAA	12.027	380030.0	382.88	992.568	VV
Dicamba	12.197	130037.0	1344.60	96.710	Vx
MCPP	12.280	10783.0	2.16	4990.695	xV
MCPA	12.790	23137.0	5.07	4559.737	BV
DCP	13.147	51052.0	508.17	100.463	vv
2,4-D	13.713	60135.0	598.69	100.445	VV
Pentachlorophenol	14.433	483799.0	4844.71	99.861	VV
Silvex	14.583	191601.0	1957.30	97.890	VV
2,4,5-T	15.223	200838.0	2001.68	100.335	BV
Chloramben	15.487	90738.0	1388.68	65.341	VV
Dinoseb	15.643	85655.0	1048.62	81.684	VV
2,4-DB	15.813	33255.0	340.05	97.795	VV
Bentazon	16.727	9918.0	217.11	45.682	BV
Dacthal	17.003	215912.0	2312.00	93.387	VV
Picloram	17.520	173992.0	2085.24	83.440	BV
Acifluorfen	19.217	103143.0	1107.39	93.141	vv

c:\ezchrom\chrom\wb19\wb19.012 -- Channel A



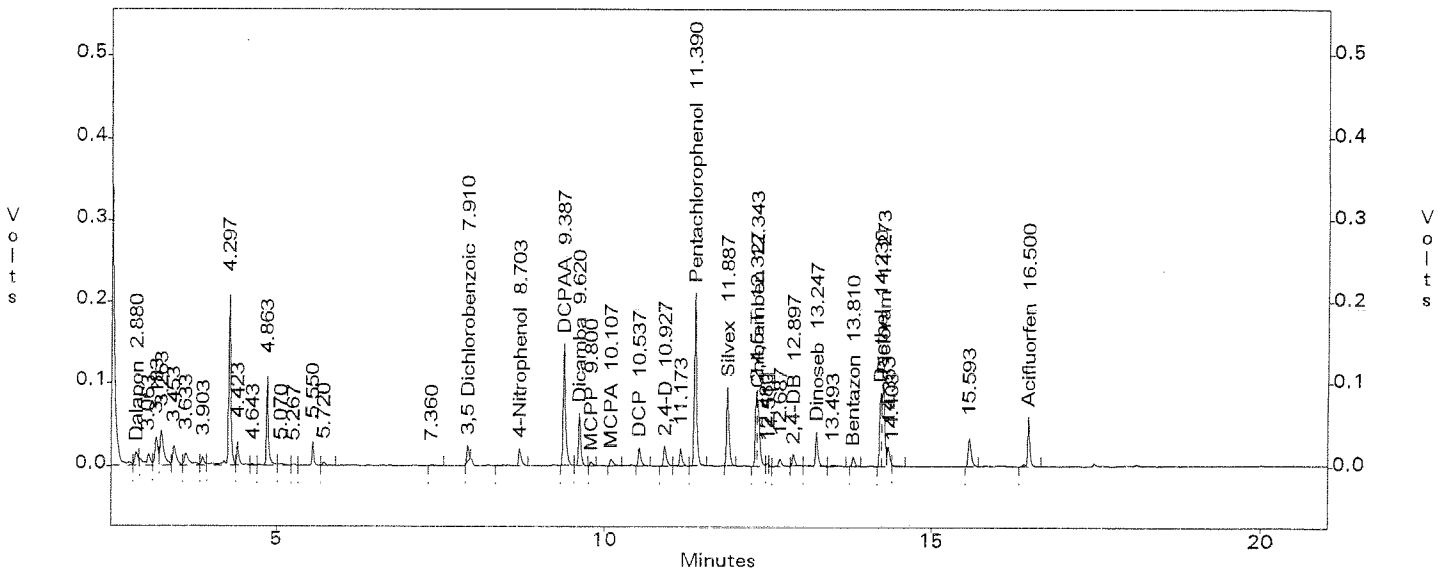
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.012
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WL
Acquired : Feb 19, 2016 19:44:05
Printed : Feb 22, 2016 09:15:42
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.880	54360.0	618.45	87.897	VS
3,5 Dichlorobenzoic	7.910	41350.0	757.07	54.618	BS
4-Nitrophenol	8.703	70610.0	430.56	163.997	VV
DCPAA	9.387	383261.0	385.54	994.101	BV
Dicamba	9.620	155507.0	1561.07	99.616	VV
MCPP	9.800	13676.0	2.52	5417.349	vv
MCPA	10.107	27958.0	5.09	5495.013	BV
DCP	10.537	59385.0	564.08	105.278	BI
2,4-D	10.927	67632.0	706.46	95.734	BV
Pentachlorophenol	11.390	538847.0	5597.35	96.268	VV
Silvex	11.887	240913.0	2321.63	103.769	vv
2,4,5-T	12.327	178768.0	1649.51	108.376	Bx
Chloramben	12.343	194290.0	2615.99	74.270	xS
2,4-DB	12.897	39432.0	401.89	98.115	vv
Dinoseb	13.247	101727.0	1494.07	68.087	VV
Bentazon	13.810	28312.0	305.54	92.663	BI
Dacthal	14.230	165955.0	2450.60	67.720	Bx
Picloram	14.273	294954.0	3490.13	84.511	xS
Acifluorfen	16.500	136186.0	1644.22	82.827	BV

c:\ezchrom\chrom\wb19\wb19.012 -- Channel B



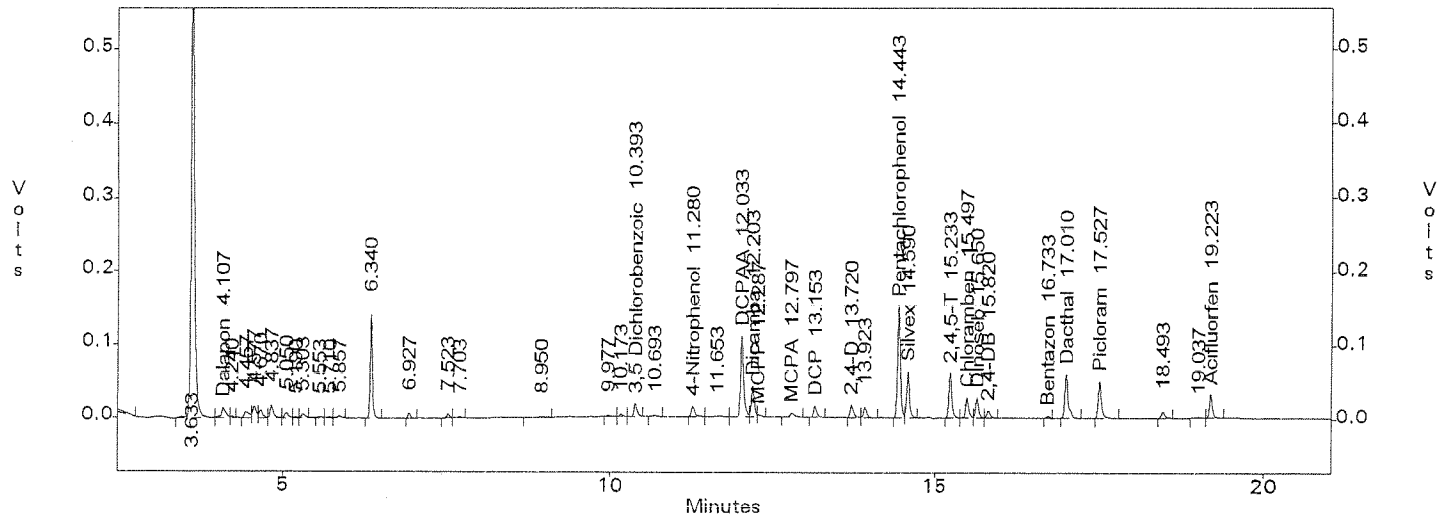
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.005
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : HEB007WC
Acquired : Feb 19, 2016 15:47:04
Printed : Feb 22, 2016 10:17:03
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.107	58731.0	643.80	91.226	VV
3,5 Dichlorobenzoic	10.393	58394.0	677.65	86.171	VV
4-Nitrophenol	11.280	51103.0	308.97	165.398	BV
DCPAA	12.033	371421.0	382.88	970.083	VV
Dicamba	12.203	124711.0	1344.60	92.749	Vx
MCPP	12.287	10789.0	2.16	4993.472	xx
MCPA	12.797	22837.0	5.07	4500.614	VV
DCP	13.153	50659.0	508.17	99.690	vv
2,4-D	13.720	58808.0	598.69	98.228	VV
Pentachlorophenol	14.443	469784.0	4844.71	96.968	BV
Silvex	14.590	185568.0	1957.30	94.808	VV
2,4,5-T	15.233	192333.0	2001.68	96.086	BV
Chloramben	15.497	88711.0	1388.68	63.881	VV
Dinoseb	15.650	82792.0	1048.62	78.953	VV
2,4-DB	15.820	32294.0	340.05	94.969	VV
Bentazon	16.733	9308.0	217.11	42.872	BV
Dacthal	17.010	206396.0	2312.00	89.272	VV
Picloram	17.527	165120.0	2085.24	79.185	BV
Acifluorfen	19.223	96734.0	1107.39	87.354	vv

c:\ezchrom\chrom\wb19\wb19.005 -- Channel A



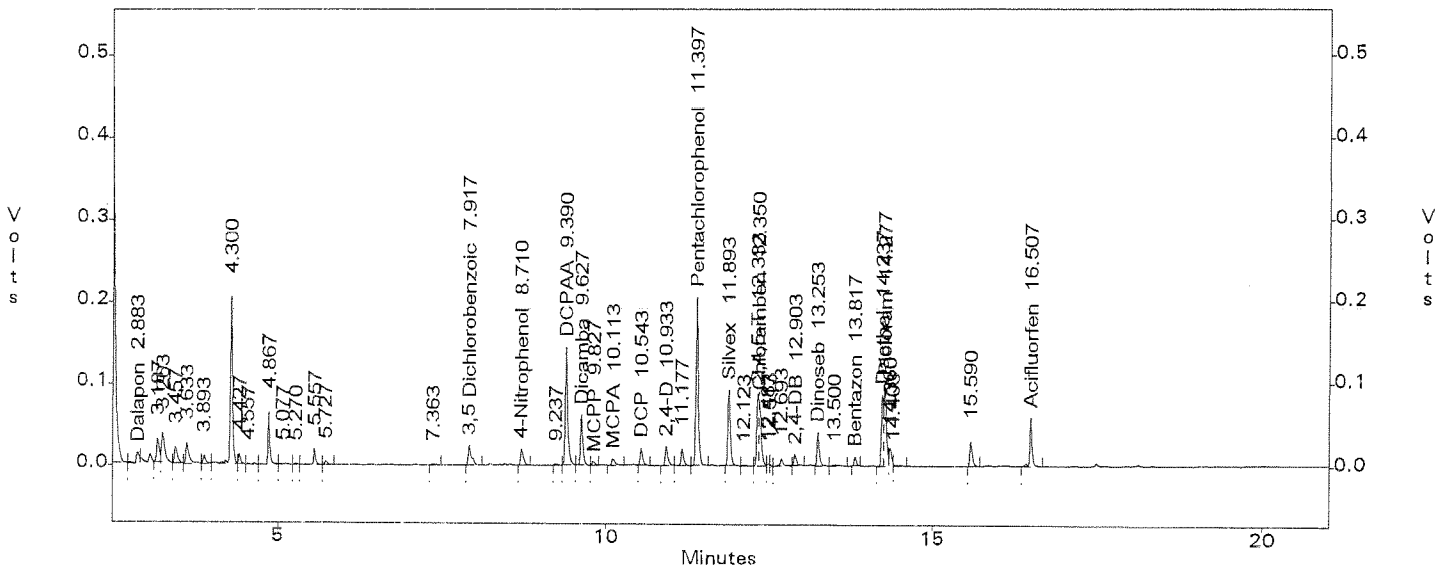
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.005
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : HEB007WC
Acquired : Feb 19, 2016 15:47:04
Printed : Feb 22, 2016 10:17:03
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.883	42132.0	618.45	68.125	HH
3,5 Dichlorobenzoic	7.917	80105.0	757.07	105.809	BV
4-Nitrophenol	8.710	59166.0	430.56	137.417	BV
DCPAA	9.390	373603.0	385.54	969.050	VV
Dicamba	9.627	150773.0	1561.07	96.583	VV
MCPP	9.827	13245.0	2.52	5246.621	vv
MCPA	10.113	26157.0	5.09	5141.035	xV
DCP	10.543	56713.0	564.08	100.541	BI
2,4-D	10.933	65919.0	706.46	93.309	BV
Pentachlorophenol	11.397	526062.0	5597.35	93.984	VI
Silvex	11.893	236354.0	2321.63	101.805	vv
2,4,5-T	12.333	176177.0	1649.51	106.805	xx
Chloramben	12.350	191146.0	2615.99	73.068	xS
2,4-DB	12.903	38265.0	401.89	95.212	vv
Dinoseb	13.253	99710.0	1494.07	66.737	BV
Bentazon	13.817	26593.0	305.54	87.037	vv
Dacthal	14.237	172371.0	2450.60	70.338	Bx
Picloram	14.277	270931.0	3490.13	77.628	xS
Acifluorfen	16.507	135380.0	1644.22	82.337	BV

c:\ezchrom\chrom\wb19\wb19.005 -- Channel B

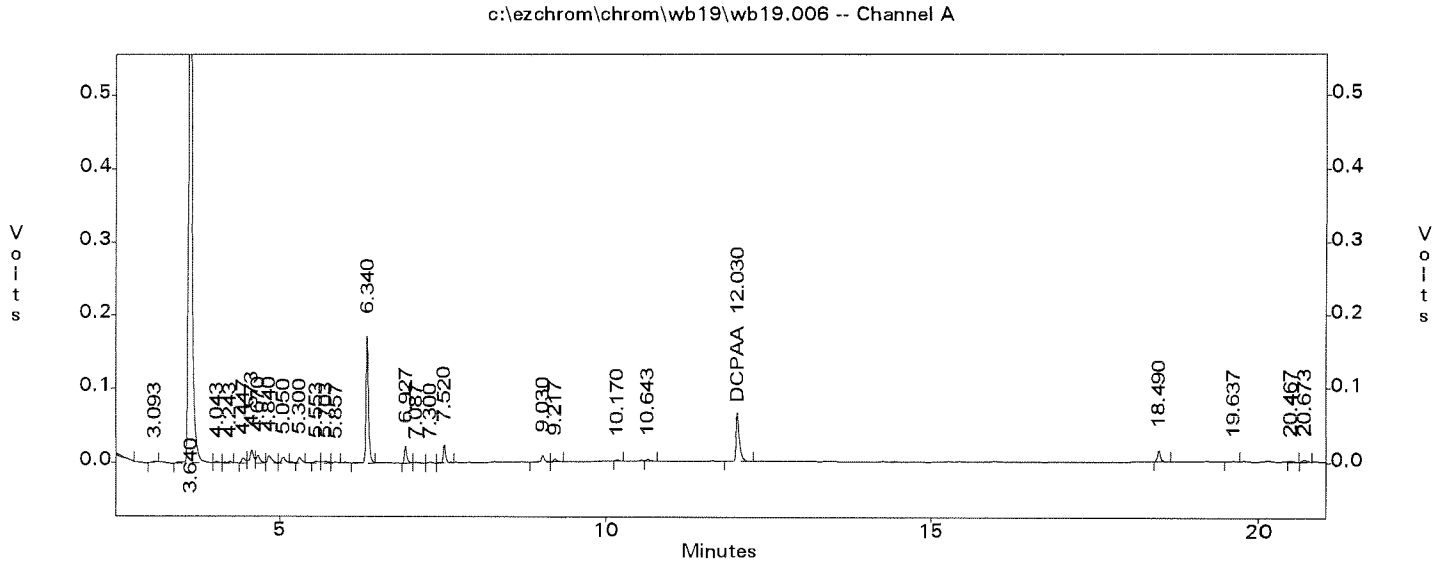


EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.006
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : TXB005SB
Acquired : Feb 19, 2016 16:20:57
Printed : Feb 22, 2016 09:07:24
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	10.397	0.0	0.00	0.000	--
4-Nitrophenol	11.283	0.0	0.00	0.000	--
DCPAA	12.030	219456.0	382.88	573.178	Vx
Dicamba	12.203	0.0	0.00	0.000	--
MCPP	12.290	0.0	0.00	0.000	--
MCPA	12.797	0.0	0.00	0.000	--
DCP	13.153	0.0	0.00	0.000	--
2,4-D	13.720	0.0	0.00	0.000	--
Pentachlorophenol	14.443	0.0	0.00	0.000	--
Silvex	14.590	0.0	0.00	0.000	--
2,4,5-T	15.233	0.0	0.00	0.000	--
Chloramben	15.497	0.0	0.00	0.000	--
Dinoseb	15.650	0.0	0.00	0.000	--
2,4-DB	15.823	0.0	0.00	0.000	--
Bentazon	16.737	0.0	0.00	0.000	--
Dacthal	17.010	0.0	0.00	0.000	--
Picloram	17.530	0.0	0.00	0.000	--
Acifluorfen	19.227	0.0	0.00	0.000	--



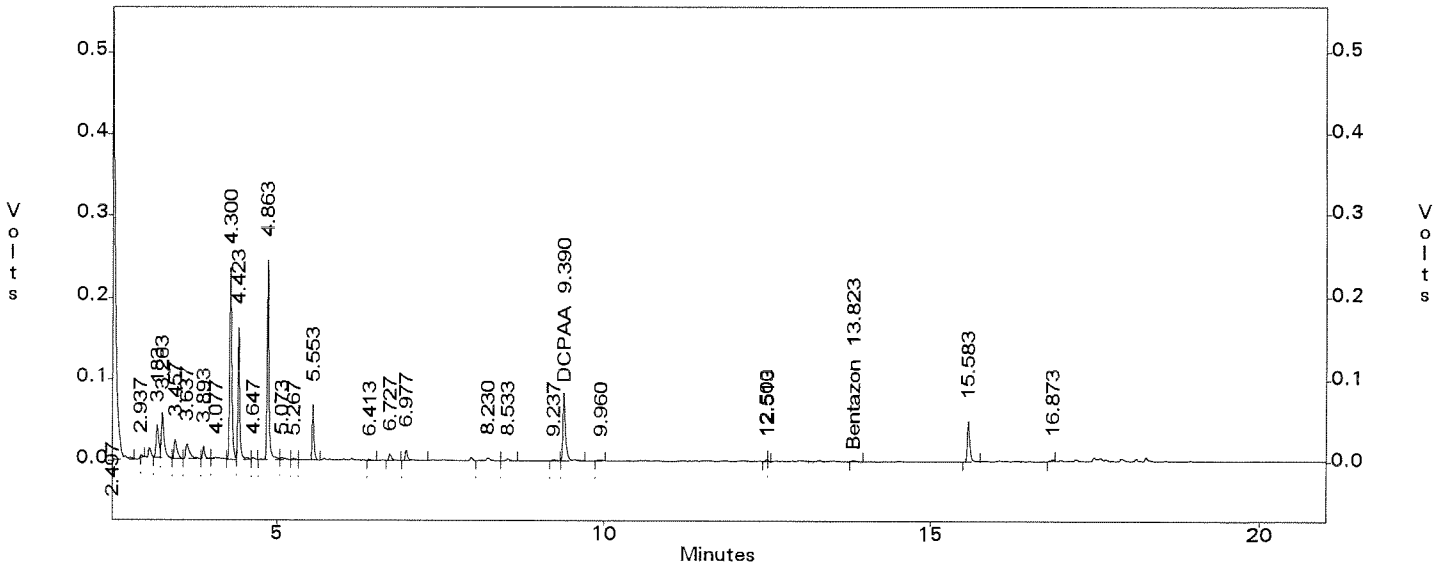
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.006
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : TXB005SB
Acquired : Feb 19, 2016 16:20:57
Printed : Feb 22, 2016 09:07:24
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.883	0.0	0.00	0.000	--
3,5 Dichlorobenzoic	7.920	0.0	0.00	0.000	--
4-Nitrophenol	8.717	0.0	0.00	0.000	--
DCPAA	9.390	230418.0	385.54	597.658	VB
Dicamba	9.630	0.0	0.00	0.000	--
MCPP	9.807	0.0	0.00	0.000	--
MCPA	10.113	0.0	0.00	0.000	--
DCP	10.547	0.0	0.00	0.000	--
2,4-D	10.937	0.0	0.00	0.000	--
Pentachlorophenol	11.400	0.0	0.00	0.000	--
Silvex	11.897	0.0	0.00	0.000	--
2,4,5-T	12.340	0.0	0.00	0.000	--
Chloramben	12.363	0.0	0.00	0.000	--
2,4-DB	12.910	0.0	0.00	0.000	--
Dinoseb	13.257	0.0	0.00	0.000	--
Bentazon	13.823	4350.0	305.54	14.237	vv
Dacthal	14.237	0.0	0.00	0.000	--
Picloram	14.283	0.0	0.00	0.000	--
Acifluorfen	16.510	0.0	0.00	0.000	--

c:\ezchrom\chrom\wb19\wb19.006 -- Channel B



INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
LFID & Datetime: WL17009A 12/17/15 14:27
LFID & Datetime: WL17008A 12/17/15 13:59
LFID & Datetime: WL17007A 12/17/15 13:31
LFID & Datetime: WL17006A 12/17/15 13:04
LFID & Datetime: WL17005A 12/17/15 12:36
LFID & Datetime: WL17004A 12/17/15 12:08
LFID & Datetime: WL17003A 12/17/15 11:41
LFID & Datetime: WL17002A 12/17/15 11:13
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
Dalapon	9.10	0	554	689	641	658	641	672	652	643.8	6.7
3,5-Dichlorobenzo	9.31	0	654	735	677	689	681	662	645	677.7	4.4
4-Nitrophenol	9.09	0	285	337	311	316	315	299	300	309.0	5.3
Dicamba	9.40	0	1161	1402	1337	1391	1395	1373	1354	1344.6	6.3
MCPP	469.30	0	0	1.94	2.01	2.33	2.18	2.19	2.30	2.16	7.1
MCPA	467.30	0	0	6.35	5.16	5.09	4.91	4.42	4.52	5.07	13.6
Dichloroprop	9.44	0	485	549	507	516	511	493	497	508.2	4.1
2,4-D	9.40	0	573	664	602	609	595	582	567	598.7	5.4
Pentachlorophenol	9.50	3804	3827	5026	4975	5305	5337	5285	5200	4844.7	13.4
2,4,5-TP(Silvex)	9.50	0	1537	1932	1889	2055	2092	2103	2092	1957.3	10.4
Chloramben	9.36	0	1129	1368	1325	1439	1468	1496	1496	1388.7	9.5
2,4,5-T	9.48	0	1636	2014	1960	2092	2116	2109	2084	2001.7	8.5
2,4-DB	9.47	0	345	370	336	338	333	333	324	340.0	4.4
Dinoseb	9.45	0	1011	1144	1034	1064	1047	1036	1004	1048.6	4.5
Bentazon	9.45	0	188	218	210	224	226	229	226	217.1	6.6
Dacthal	9.15	0	1757	2209	2229	2450	2496	2524	2520	2312.0	12.1
Picloram	9.45	0	1462	1978	2003	2247	2260	2319	2327	2085.2	14.9
Acifluorfen	9.63	0	986	1212	1068	1153	1141	1127	1064	1107.4	6.7
SURROGATE	X	1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
2,4-DCPAA	93.58	0	415	439	387	381	367	353	338	382.9	9.1

12/30/15

INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
LFID & Datetime: WL17009B 12/17/15 14:27
LFID & Datetime: WL17008B 12/17/15 13:59
LFID & Datetime: WL17007B 12/17/15 13:31
LFID & Datetime: WL17006B 12/17/15 13:04
LFID & Datetime: WL17005B 12/17/15 12:36
LFID & Datetime: WL17004B 12/17/15 12:08
LFID & Datetime: WL17003B 12/17/15 11:41
LFID & Datetime: WL17002B 12/17/15 11:13
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
Dalapon	9.10	0	513	584	685	656	639	646	607	618.4	9.2
3,5-Dichlorobenzo	9.31	0	837	879	769	752	720	689	653	757.1	10.6
4-Nitrophenol	9.09	0	500	516	440	425	400	378	356	430.6	13.9
Dicamba	9.40	0	1607	1739	1569	1572	1531	1484	1425	1561.1	6.4
MCPP	469.30	0	0	2.54	2.53	2.60	2.56	2.49	2.43	2.52	2.3
MCPA	467.30	0	0	6.22	5.57	5.19	4.81	4.51	4.22	5.09	14.5
Dichloroprop	9.44	0	620	650	572	561	538	516	492	564.1	9.9
2,4-D	9.40	0	766	804	711	702	681	653	628	706.5	8.7
Pentachlorophenol	9.50	5946	5593	6236	5613	5604	5436	5273	5077	5597.4	6.5
2,4,5-TP(Silvex)	9.50	0	2166	2553	2358	2388	2329	2271	2187	2321.6	5.7
Chloramben	9.36	0	2409	2712	2581	2722	2738	2592	2557	2616.0	4.5
2,4,5-T	9.48	0	1559	1991	1771	1675	1542	1563	1446	1649.5	11.1
2,4-DB	9.47	0	411	457	405	404	392	380	365	401.9	7.2
Dinoseb	9.45	0	1532	1687	1505	1512	1462	1405	1355	1494.1	7.1
Bentazon	9.45	0	300	338	305	306	303	297	290	305.5	5.0
Dacthal	9.15	0	2544	2741	2544	2468	2465	2279	2114	2450.6	8.2
Picloram	9.45	0	2639	3642	3481	3754	3628	3660	3628	3490.1	11.0
Acifluorfen	9.63	0	1503	1764	1603	1697	1682	1651	1610	1644.2	5.1

SURROGATE	X	1.00X	2.00X	4.00X	7.00X	10.00X	13.00X	16.00X	20.00X	MEAN	%RSD
2,4-DCPAA	93.58	0	453	449	386	375	360	346	331	385.5	12.5

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INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
LFID & Datetime: WL17009A 12/17/15 14:27
LFID & Datetime: WL17008A 12/17/15 13:59
LFID & Datetime: WL17007A 12/17/15 13:31
LFID & Datetime: WL17006A 12/17/15 13:04
LFID & Datetime: WL17005A 12/17/15 12:36
LFID & Datetime: WL17004A 12/17/15 12:08
LFID & Datetime: WL17003A 12/17/15 11:41
LFID & Datetime: WL17002A 12/17/15 11:13

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	7.0X	10.0X	13.0X	16.0X	20.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Dalapon	4.103	4.103	4.103	4.110	4.107	4.110	4.113	4.117	4.109	4.093	4.125	0.016
3,5-Dichlorobenzo	10.393	10.393	10.393	10.397	10.400	10.407	10.410	10.413	10.402	10.381	10.423	0.021
4-Nitrophenol	11.280	11.280	11.280	11.283	11.287	11.293	11.297	11.300	11.289	11.269	11.309	0.020
Dicamba	12.203	12.203	12.207	12.210	12.213	12.220	12.220	12.227	12.214	12.191	12.237	0.023
MCPP	0.000	0.000	12.293	12.297	12.300	12.303	12.307	12.313	12.302	12.279	12.325	0.023
MCPA	12.803	12.803	12.803	12.803	12.807	12.813	12.813	12.820	12.810	12.788	12.832	0.022
Dichloroprop	13.153	13.157	13.157	13.160	13.163	13.170	13.170	13.177	13.165	13.143	13.187	0.022
2,4-D	13.723	13.723	13.723	13.727	13.730	13.737	13.737	13.743	13.731	13.704	13.758	0.027
Pentachlorophenol	14.443	14.443	14.447	14.450	14.453	14.460	14.463	14.470	14.454	14.427	14.481	0.027
2,4,5-TP(Silvex)	14.590	14.593	14.593	14.597	14.600	14.607	14.610	14.613	14.602	14.581	14.623	0.021
Chloramben	15.497	15.500	15.500	15.503	15.507	15.513	15.517	15.520	15.509	15.487	15.531	0.022
2,4,5-T	15.237	15.237	15.237	15.240	15.243	15.250	15.253	15.257	15.245	15.223	15.267	0.022
2,4-DB	15.827	15.827	15.827	15.830	15.833	15.840	15.843	15.847	15.835	15.814	15.856	0.021
Dinoseb	15.653	15.653	15.657	15.660	15.663	15.670	15.670	15.677	15.664	15.643	15.685	0.021
Bentazon	0.000	16.740	16.740	16.743	16.750	16.757	16.760	16.763	16.750	16.729	16.771	0.021
Dacthal	17.010	17.013	17.013	17.017	17.020	17.030	17.033	17.037	17.023	17.002	17.044	0.021
Picloram	17.533	17.533	17.533	17.537	17.540	17.547	17.550	17.557	17.542	17.521	17.563	0.021
Acifluorfen	19.227	19.230	19.230	19.233	19.237	19.247	19.247	19.253	19.240	19.219	19.261	0.021

SURROGATE	1.0X	2.0X	4.0X	7.0X	10.0X	13.0X	16.0X	20.0X	RT	FROM	TO	WIDTH
2,4-DCPAA	12.037	12.037	12.037	12.037	12.043	12.047	12.050	12.057	12.044	12.021	12.067	0.023

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INITIAL CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
LFID & Datetime: WL17009B 12/17/15 14:27
LFID & Datetime: WL17008B 12/17/15 13:59
LFID & Datetime: WL17007B 12/17/15 13:31
LFID & Datetime: WL17006B 12/17/15 13:04
LFID & Datetime: WL17005B 12/17/15 12:36
LFID & Datetime: WL17004B 12/17/15 12:08
LFID & Datetime: WL17003B 12/17/15 11:41
LFID & Datetime: WL17002B 12/17/15 11:13

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.0X	4.0X	7.0X	10.0X	13.0X	16.0X	20.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Dalapon	2.913	2.893	2.890	2.893	2.893	2.897	2.897	2.900	2.895	2.879	2.911	0.016
3,5-Dichlorobenzo	7.933	7.933	7.933	7.933	7.937	7.940	7.943	7.947	7.938	7.917	7.959	0.021
4-Nitrophenol	8.737	8.733	8.730	8.733	8.733	8.737	8.740	8.743	8.736	8.705	8.767	0.031
Dicamba	9.643	9.643	9.643	9.647	9.647	9.653	9.653	9.660	9.649	9.625	9.673	0.024
MCPP	0.000	0.000	9.820	9.823	9.827	9.830	9.833	9.840	9.829	9.808	9.850	0.021
MCPA	10.133	10.130	10.130	10.130	10.133	10.137	10.140	10.143	10.136	10.112	10.160	0.024
Dichloroprop	10.563	10.563	10.560	10.563	10.567	10.570	10.573	10.577	10.568	10.542	10.594	0.026
2,4-D	10.957	10.953	10.953	10.953	10.953	10.960	10.960	10.963	10.956	10.934	10.978	0.022
Pentachlorophenol	11.413	11.413	11.413	11.417	11.420	11.423	11.427	11.433	11.420	11.396	11.444	0.024
2,4,5-TP(Silvex)	11.913	11.913	11.913	11.913	11.917	11.923	11.923	11.930	11.919	11.895	11.943	0.024
Chloramben	12.380	12.380	12.380	12.380	12.383	12.390	12.393	12.397	12.386	12.360	12.412	0.026
2,4,5-T	0.000	12.360	12.357	12.357	12.360	12.363	12.367	12.370	12.362	12.338	12.386	0.024
2,4-DB	12.933	12.933	12.930	12.930	12.930	12.933	12.937	12.940	12.933	12.907	12.959	0.026
Dinoseb	13.273	13.273	13.273	13.277	13.280	13.283	13.287	13.293	13.281	13.257	13.305	0.024
Bentazon	13.840	13.840	13.840	13.843	13.843	13.850	13.853	13.857	13.847	13.820	13.874	0.027
Dacthal	14.257	14.257	14.257	14.260	14.263	14.267	14.270	14.277	14.264	14.237	14.291	0.027
Picloram	14.310	14.310	14.307	14.307	14.307	14.313	14.313	14.320	14.311	14.285	14.337	0.026
Acifluorfen	16.530	16.533	16.530	16.533	16.537	16.543	16.547	16.550	16.539	16.515	16.563	0.024
SURROGATE	**1.0X**	**2.0X**	**4.0X**	**7.0X**	**10.0X**	**13.0X**	**16.0X**	**20.0X**	**RT**	**FROM**	**TO**	**WIDTH**
2,4-DCPAA	9.410	9.410	9.407	9.410	9.413	9.417	9.420	9.423	9.414	9.390	9.438	0.024

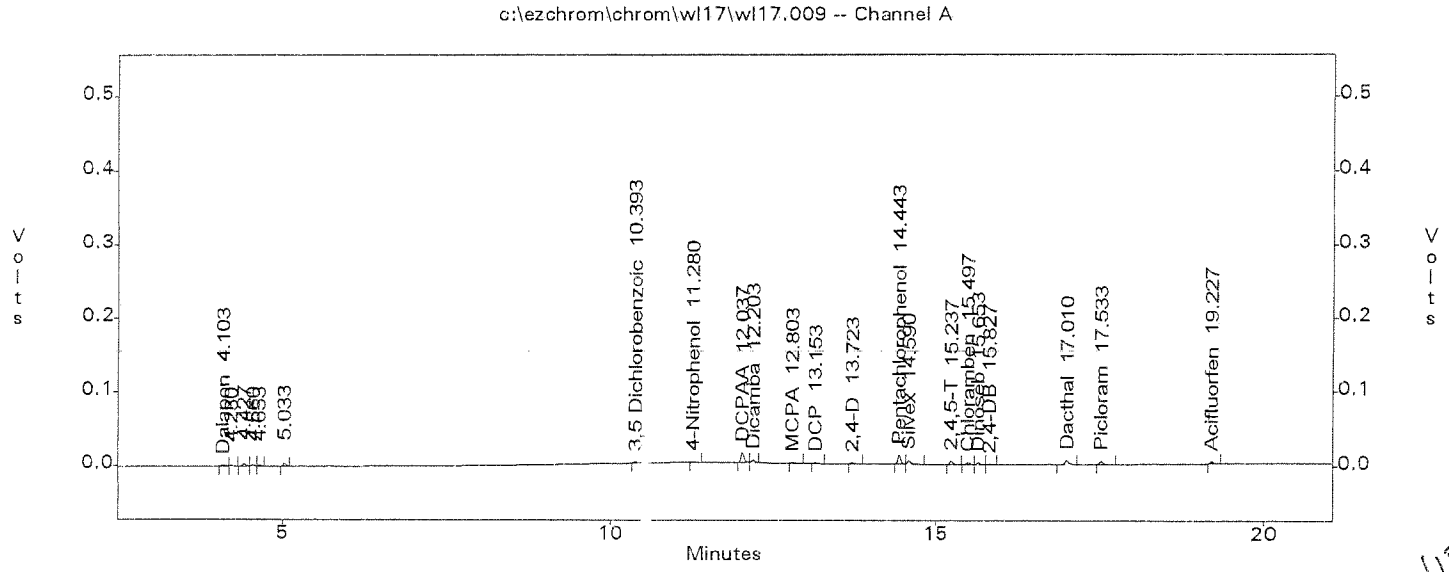
12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.009
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L171
Acquired : Dec 17, 2015 14:27:03
Printed : Dec 17, 2015 18:30:32
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	5453.0	643.80	-1.000	BV
3,5 Dichlorobenzoic	10.393	6537.0	677.65	-1.000	BV
4-Nitrophenol	11.280	2780.0	308.97	-1.000	BV
DCPAA	12.037	44436.0	382.88	-1.000	BV
Dicamba	12.203	12361.0	1344.60	-1.000	VV
MCPP	12.300	0.0	0.00	0.000	--
MCPA	12.803	3943.0	5.07	-1.000	BB
DCP	13.153	4842.0	508.17	-1.000	BB
2,4-D	13.723	5761.0	598.69	-1.000	BB
Pentachlorophenol	14.443	36120.0	4844.71	9.496	BV
Silvex	14.590	15669.0	1957.30	-1.000	VB
2,4,5-T	15.237	16184.0	2001.68	-1.000	BV
Chloramben	15.497	10829.0	1388.68	-1.000	VV
Dinoseb	15.653	9995.0	1048.62	-1.000	VV
2,4-DB	15.827	2891.0	340.05	-1.000	VV
Bentazon	16.750	0.0	0.00	0.000	--
Dacthal	17.010	16960.0	2312.00	-1.000	VB
Picloram	17.533	15356.0	2085.24	-1.000	BV
Acifluorfen	19.227	10773.0	1107.39	-1.000	BV



12/30/15

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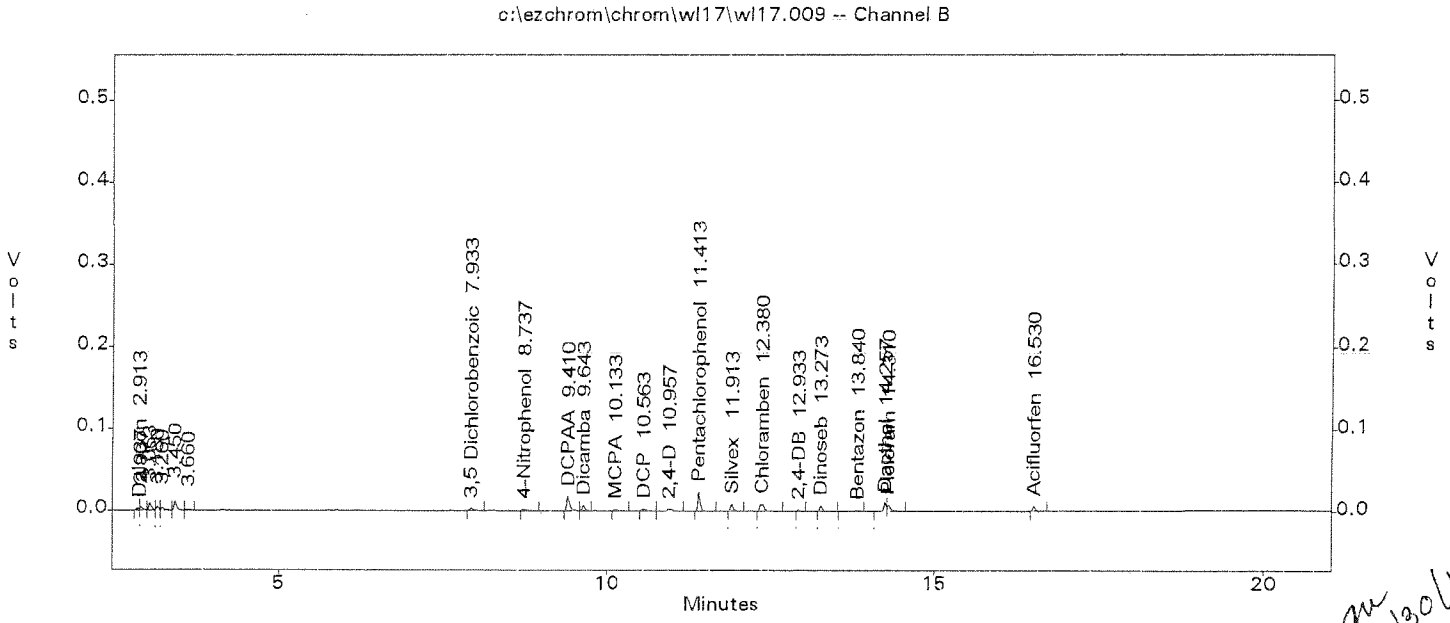
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.009
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L171
Acquired : Dec 17, 2015 14:27:03
Printed : Dec 17, 2015 18:30:32
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.913	5493.0	618.45	-1.000	Bx
3,5 Dichlorobenzoic	7.933	8784.0	757.07	-1.000	BB
4-Nitrophenol	8.737	5165.0	430.56	-1.000	BB
DCPAA	9.410	50285.0	385.54	-1.000	BV
Dicamba	9.643	16173.0	1561.07	-1.000	VB
MCPP	9.823	0.0	0.00	0.000	--
MCPA	10.133	3989.0	5.09	-1.000	BB
DCP	10.563	6647.0	564.08	-1.000	BV
2,4-D	10.957	8157.0	706.46	-1.000	VV
Pentachlorophenol	11.413	56465.0	5597.35	9.496	BB
Silvex	11.913	21436.0	2321.63	-1.000	BV
2,4,5-T	12.363	0.0	0.00	0.000	--
Chloramben	12.380	38478.0	2615.99	-1.000	BV
2,4-DB	12.933	3523.0	401.89	-1.000	BB
Dinoseb	13.273	16215.0	1494.07	-1.000	BV
Bentazon	13.840	3661.0	305.54	-1.000	Vx
Dacthal	14.257	23182.0	2450.60	-1.000	VS
Picloram	14.310	25844.0	3490.13	-1.000	SB
Acifluorfen	16.530	15821.0	1644.22	-1.000	BV



12/30/15
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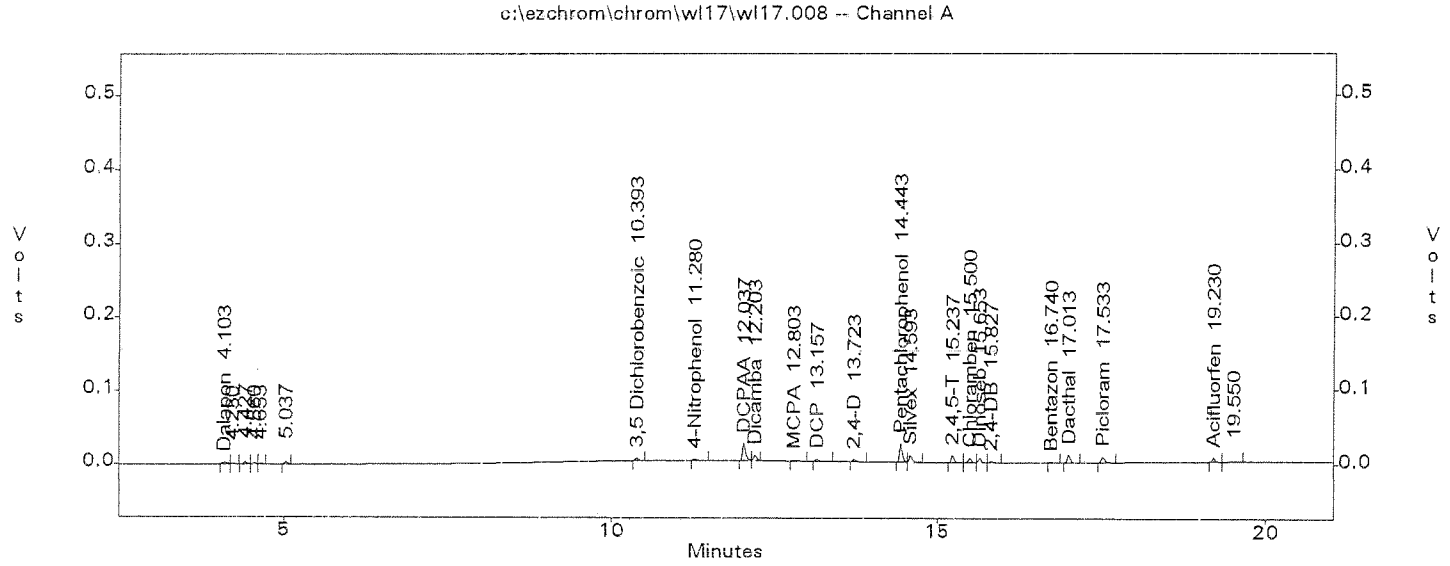
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.008
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L172
Acquired : Dec 17, 2015 13:59:25
Printed : Dec 17, 2015 18:30:42
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	10086.0	643.80	18.206	BV
3,5 Dichlorobenzoic	10.393	12186.0	677.65	18.628	BV
4-Nitrophenol	11.280	5178.0	308.97	18.170	BB
DCPAA	12.037	77660.0	382.88	187.160	BV
Dicamba	12.203	21832.0	1344.60	18.804	VV
MCPP	12.300	0.0	0.00	0.000	--
MCPA	12.803	7081.0	5.07	-1.000	BB
DCP	13.157	9154.0	508.17	18.870	BB
2,4-D	13.723	10767.0	598.69	18.804	BB
Pentachlorophenol	14.443	72683.0	4844.71	18.992	BV
Silvex	14.593	29214.0	1957.30	19.006	VB
2,4,5-T	15.237	31018.0	2001.68	18.954	BV
Chloramben	15.500	21143.0	1388.68	18.722	VV
Dinoseb	15.653	19111.0	1048.62	18.898	VV
2,4-DB	15.827	6540.0	340.05	18.932	VV
Bentazon	16.740	3546.0	217.11	18.898	BV
Dacthal	17.013	32149.0	2312.00	18.302	VB
Picloram	17.533	27638.0	2085.24	18.898	BV
Acifluorfen	19.230	18982.0	1107.39	19.254	BV



12/30/15
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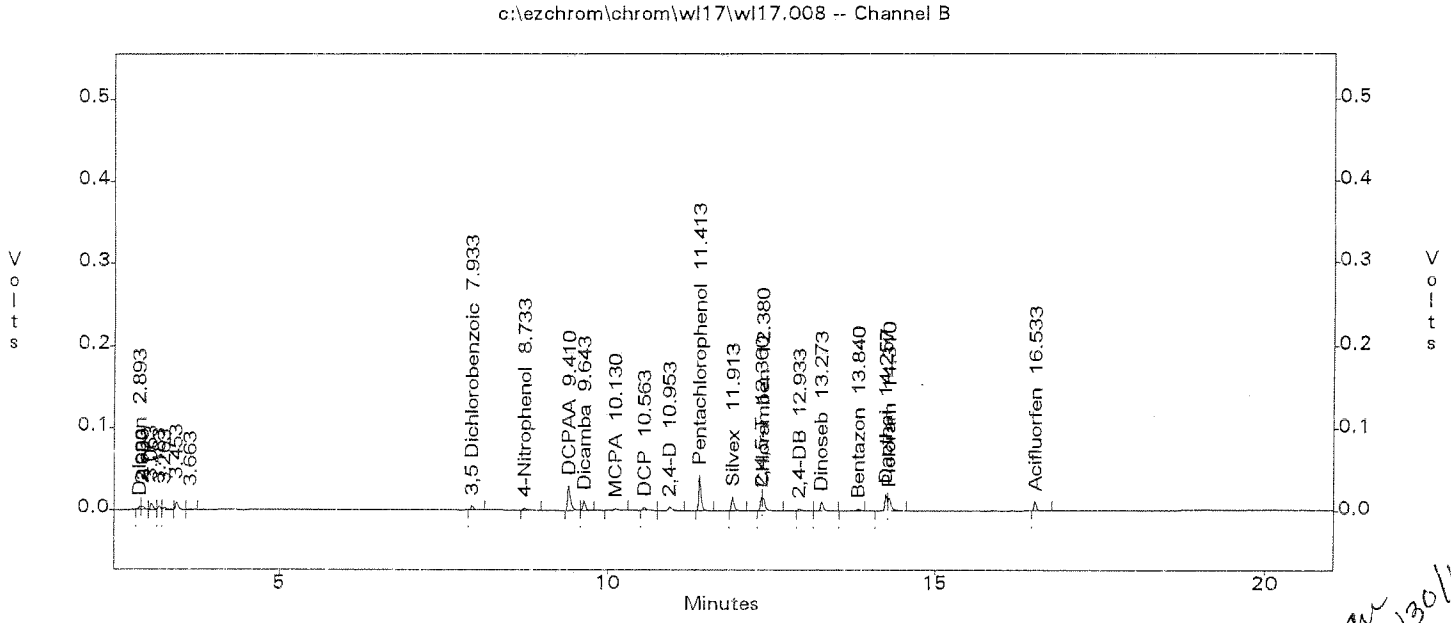
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.008
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L172
Acquired : Dec 17, 2015 13:59:25
Printed : Dec 17, 2015 18:30:43
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.893	9333.0	618.45	18.206	Bx
3,5 Dichlorobenzoic	7.933	15590.0	757.07	18.628	BB
4-Nitrophenol	8.733	9080.0	430.56	18.170	BV
DCPAA	9.410	84719.0	385.54	187.160	BV
Dicamba	9.643	30223.0	1561.07	18.804	VV
MCPP	9.823	0.0	0.00	0.000	--
MCPA	10.130	6953.0	5.09	-1.000	VV
DCP	10.563	11697.0	564.08	18.870	BV
2,4-D	10.953	14399.0	706.46	18.804	VV
Pentachlorophenol	11.413	106231.0	5597.35	18.992	BB
Silvex	11.913	41162.0	2321.63	19.006	BB
2,4,5-T	12.360	29554.0	1649.51	18.954	Bx
Chloramben	12.380	45098.0	2615.99	18.722	xV
2,4-DB	12.933	7783.0	401.89	18.932	BV
Dinoseb	13.273	28956.0	1494.07	18.898	VV
Bentazon	13.840	5672.0	305.54	18.898	Vx
Dacthal	14.257	46552.0	2450.60	18.302	VV
Picloram	14.310	49864.0	3490.13	18.898	VB
Acifluorfen	16.533	28931.0	1644.22	19.254	BB



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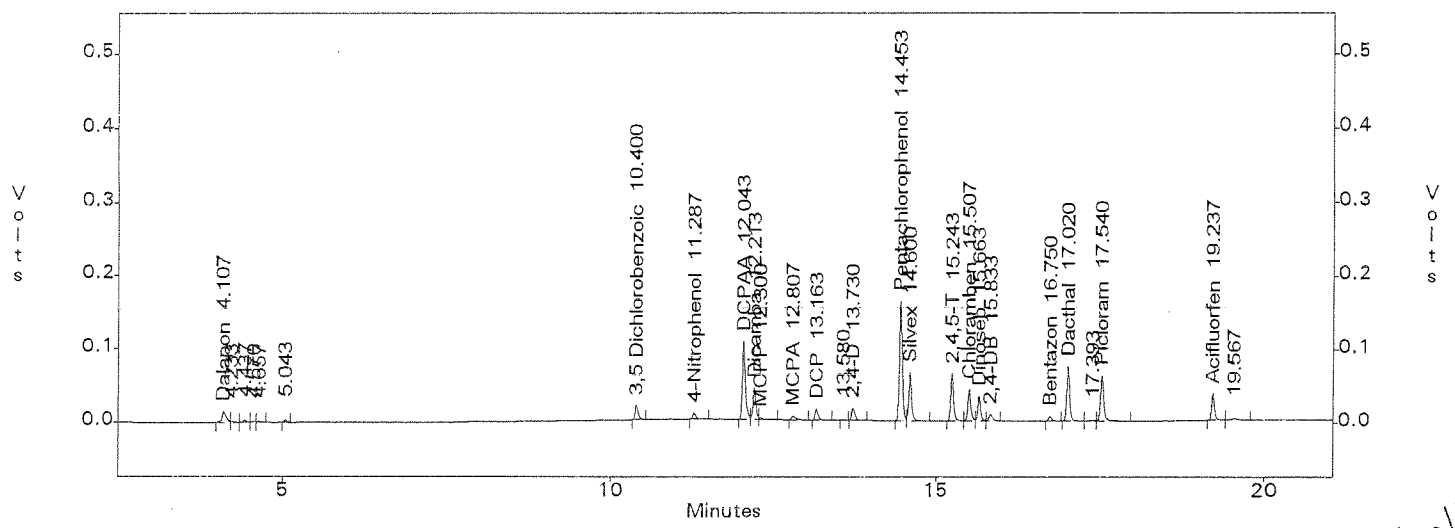
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.005
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L175
Acquired : Dec 17, 2015 12:36:22
Printed : Dec 17, 2015 18:31:05
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.107	59900.0	643.80	91.030	BV
3,5 Dichlorobenzoic	10.400	64196.0	677.65	93.140	BV
4-Nitrophenol	11.287	28701.0	308.97	90.850	BB
DCPAA	12.043	356688.0	382.88	935.800	BV
Dicamba	12.213	130761.0	1344.60	94.020	Vx
MCPP	12.300	10947.0	2.16	4691.500	xV
MCPA	12.807	23781.0	5.07	4673.000	VB
DCP	13.163	48659.0	508.17	94.350	BB
2,4-D	13.730	57229.0	598.69	94.020	VB
Pentachlorophenol	14.453	503736.0	4844.71	94.960	BV
Silvex	14.600	195292.0	1957.30	95.030	VB
2,4,5-T	15.243	198261.0	2001.68	94.770	BV
Chloramben	15.507	134699.0	1388.68	93.610	VV
Dinoseb	15.663	100494.0	1048.62	94.490	VV
2,4-DB	15.833	32030.0	340.05	94.660	VV
Bentazon	16.750	21149.0	217.11	94.490	BV
Dacthal	17.020	224199.0	2312.00	91.510	VV
Picloram	17.540	212272.0	2085.24	94.490	VV
Acifluorfen	19.237	111012.0	1107.39	96.270	BV

c:\ezchrom\chrom\wl17\wl17.005 -- Channel A



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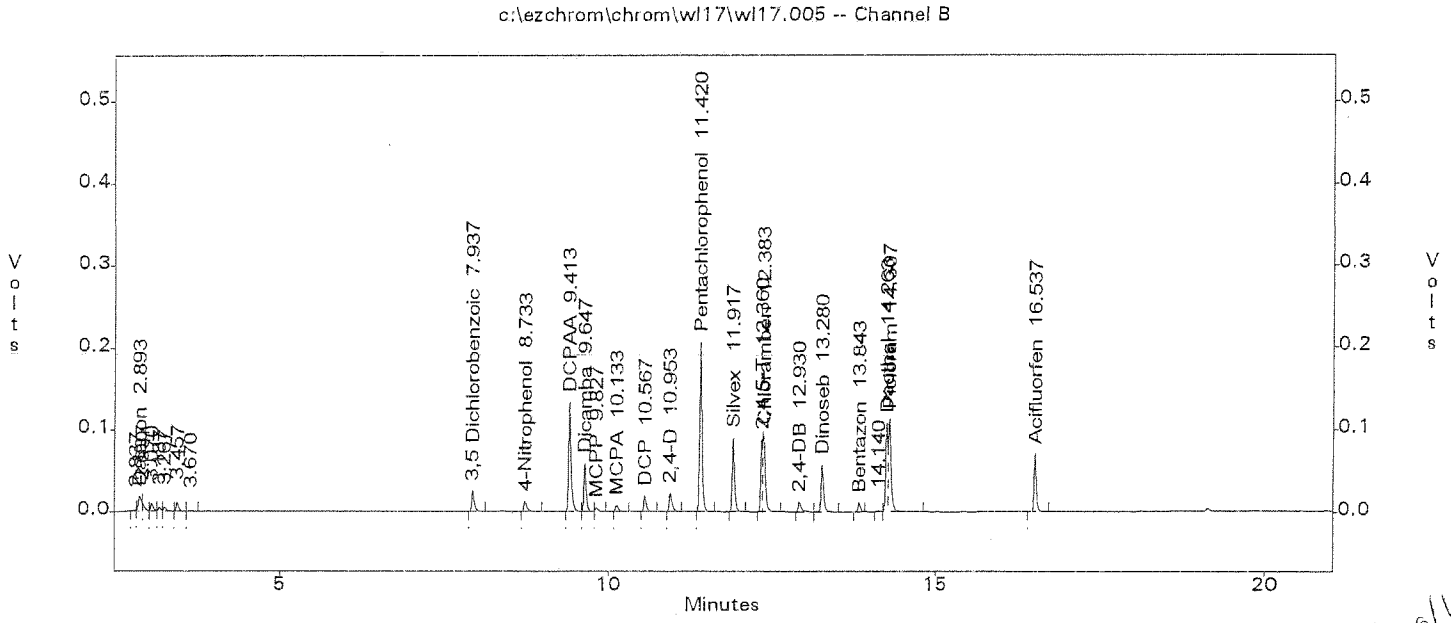
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.005
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L175
Acquired : Dec 17, 2015 12:36:22
Printed : Dec 17, 2015 18:31:05
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.893	59682.0	618.45	91.030	xx
3,5 Dichlorobenzoic	7.937	70083.0	757.07	93.140	BB
4-Nitrophenol	8.733	38606.0	430.56	90.850	VV
DCPAA	9.413	351372.0	385.54	935.800	BV
Dicamba	9.647	147841.0	1561.07	94.020	VV
MCPP	9.827	12193.0	2.52	4691.500	VV
MCPA	10.133	24264.0	5.09	4673.000	VV
DCP	10.567	52969.0	564.08	94.350	BV
2,4-D	10.953	65970.0	706.46	94.020	VB
Pentachlorophenol	11.420	532192.0	5597.35	94.960	BB
Silvex	11.917	226965.0	2321.63	95.030	BB
2,4,5-T	12.360	158725.0	1649.51	94.770	Bx
Chloramben	12.383	254834.0	2615.99	93.610	xB
2,4-DB	12.930	38267.0	401.89	94.660	BV
Dinoseb	13.280	142864.0	1494.07	94.490	VB
Bentazon	13.843	28912.0	305.54	94.490	Bx
Dacthal	14.263	225813.0	2450.60	91.510	VS
Picloram	14.307	354706.0	3490.13	94.490	SB
Acifluorfen	16.537	163381.0	1644.22	96.270	VB



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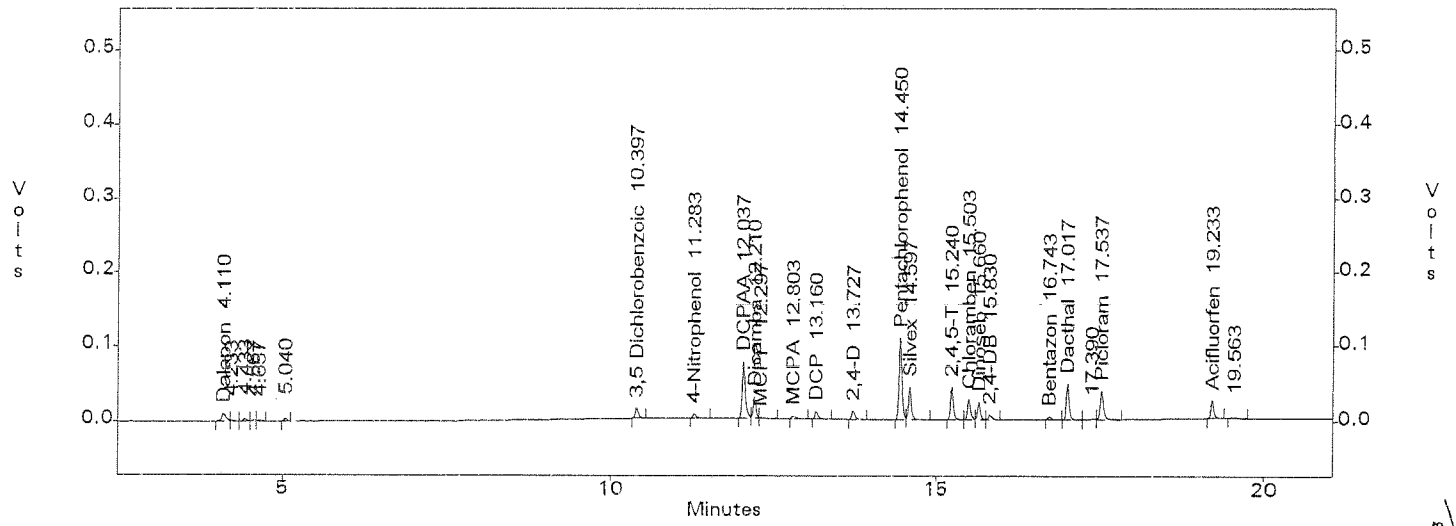
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.006
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L174
Acquired : Dec 17, 2015 13:04:01
Printed : Dec 17, 2015 18:31:16
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.110	40823.0	643.80	63.721	BV
3,5 Dichlorobenzoic	10.397	44143.0	677.65	65.198	BV
4-Nitrophenol	11.283	19805.0	308.97	63.595	BB
DCPAA	12.037	253710.0	382.88	655.060	BV
Dicamba	12.210	87984.0	1344.60	65.814	Vx
MCPP	12.297	6613.0	2.16	3284.050	xV
MCPA	12.803	16869.0	5.07	3271.100	BB
DCP	13.160	33467.0	508.17	66.045	BB
2,4-D	13.727	39626.0	598.69	65.814	VB
Pentachlorophenol	14.450	330690.0	4844.71	66.472	BV
Silvex	14.597	125689.0	1957.30	66.521	VB
2,4,5-T	15.240	130025.0	2001.68	66.339	BV
Chloramben	15.503	86822.0	1388.68	65.527	VV
Dinoseb	15.660	68378.0	1048.62	66.143	VV
2,4-DB	15.830	22254.0	340.05	66.262	VV
Bentazon	16.743	13899.0	217.11	66.143	BV
Dacthal	17.017	142786.0	2312.00	64.057	VV
Picloram	17.537	132472.0	2085.24	66.143	VV
Acifluorfen	19.233	71957.0	1107.39	67.389	BB

c:\ezchrom\chrom\wl17\wl17.006 -- Channel A



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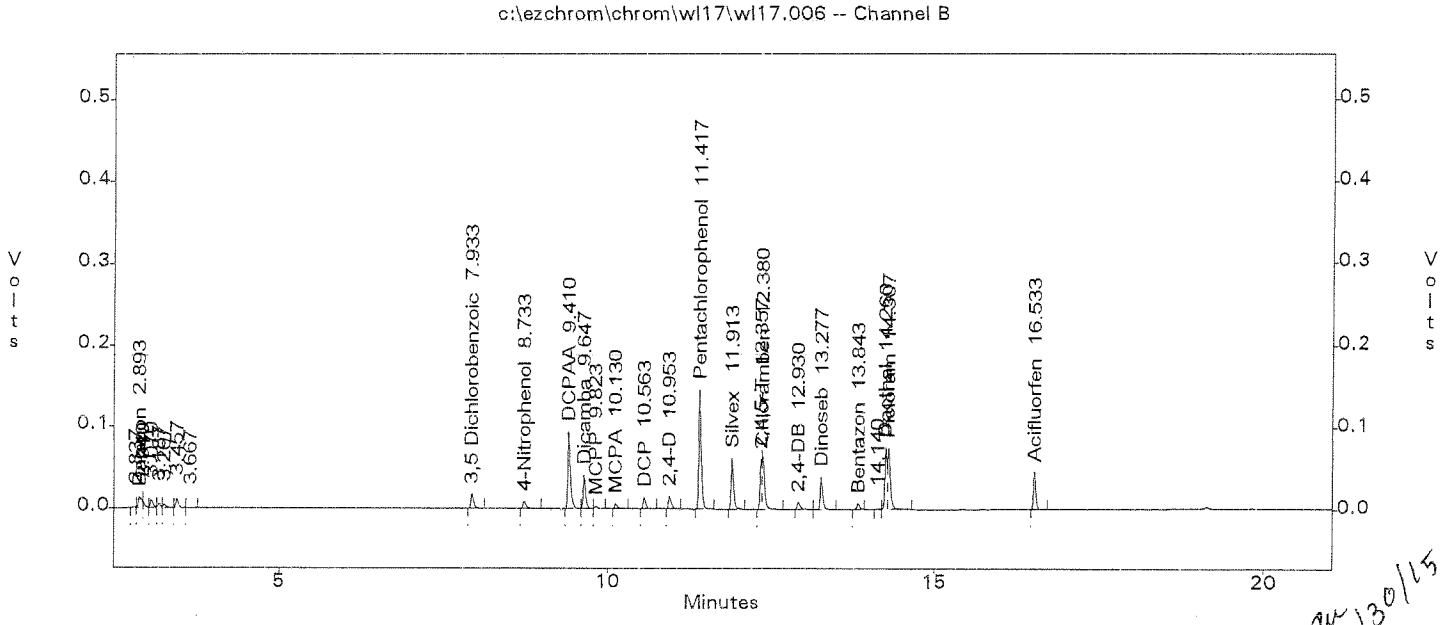
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.006
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L174
Acquired : Dec 17, 2015 13:04:01
Printed : Dec 17, 2015 18:31:16
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.893	43637.0	618.45	63.721	xx
3,5 Dichlorobenzoic	7.933	50123.0	757.07	65.198	BB
4-Nitrophenol	8.733	27960.0	430.56	63.595	VV
DCPAA	9.410	252682.0	385.54	655.060	BV
Dicamba	9.647	103272.0	1561.07	65.814	VV
MCPP	9.823	8314.0	2.52	3284.050	VV
MCPA	10.130	18233.0	5.09	3271.100	VV
DCP	10.563	37747.0	564.08	66.045	BV
2,4-D	10.953	46824.0	706.46	65.814	VB
Pentachlorophenol	11.417	373132.0	5597.35	66.472	BB
Silvex	11.913	156850.0	2321.63	66.521	BV
2,4,5-T	12.357	117466.0	1649.51	66.339	Bx
Chloramben	12.380	169146.0	2615.99	65.527	xV
2,4-DB	12.930	26834.0	401.89	66.262	BV
Dinoseb	13.277	99564.0	1494.07	66.143	VB
Bentazon	13.843	20141.0	305.54	66.143	Bx
Dacthal	14.260	162961.0	2450.60	64.057	VS
Picloram	14.307	230241.0	3490.13	66.143	SB
Acifluorfen	16.533	108058.0	1644.22	67.389	BB



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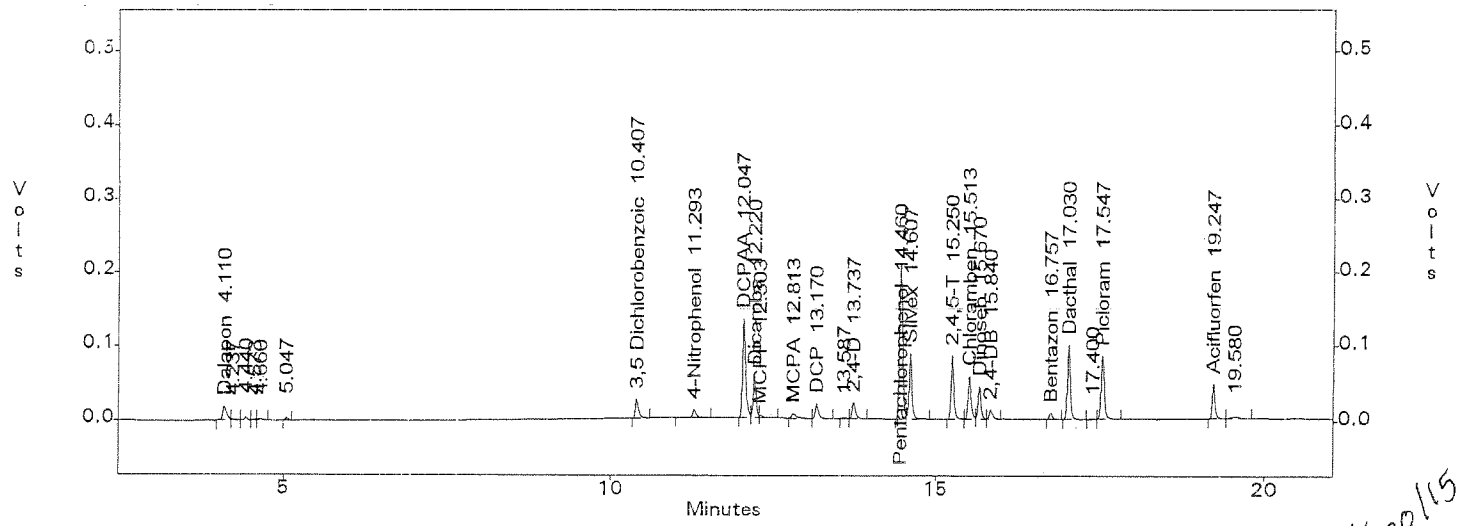
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.004
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L176
Acquired : Dec 17, 2015 12:08:45
Printed : Dec 17, 2015 18:31:26
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.110	75889.0	643.80	118.339	BV
3,5 Dichlorobenzoic	10.407	82414.0	677.65	121.082	BV
4-Nitrophenol	11.293	37174.0	308.97	118.105	VB
DCPAA	12.047	446002.0	382.88	1216.540	BV
Dicamba	12.220	170486.0	1344.60	122.226	Vx
MCPP	12.303	13321.0	2.16	6098.950	xV
MCPA	12.813	29809.0	5.07	6074.900	VV
DCP	13.170	62676.0	508.17	122.655	VB
2,4-D	13.737	72738.0	598.69	122.226	VB
Pentachlorophenol	14.460	658861.0	4844.71	123.448	BV
Silvex	14.607	258406.0	1957.30	123.539	VB
2,4,5-T	15.250	260683.0	2001.68	123.201	BV
Chloramben	15.513	178661.0	1388.68	121.693	VV
Dinoseb	15.670	128622.0	1048.62	122.837	VV
2,4-DB	15.840	41009.0	340.05	123.058	VV
Bentazon	16.757	27729.0	217.11	122.837	BV
Dacthal	17.030	296881.0	2312.00	118.963	VV
Picloram	17.547	277644.0	2085.24	122.837	VB
Acifluorfen	19.247	142817.0	1107.39	125.151	BV

c:\ezchrom\chrom\wl17\wl17.004 -- Channel A



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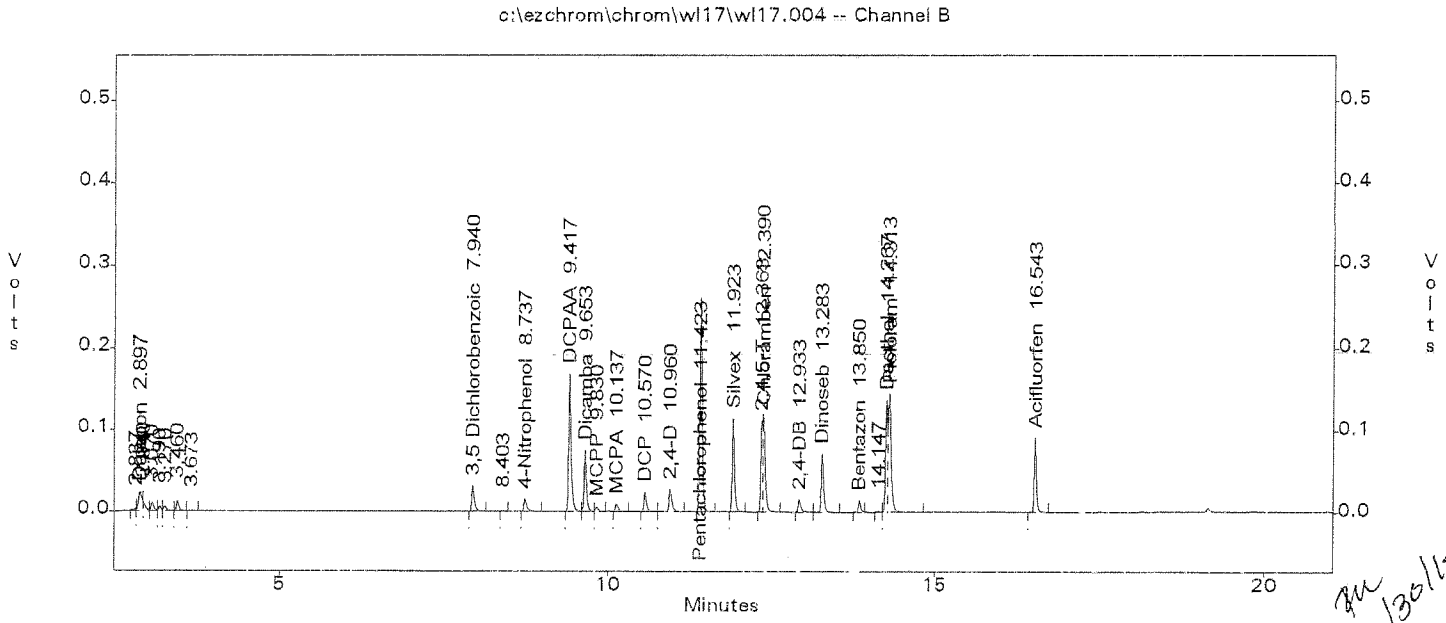
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.004
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L176
Acquired : Dec 17, 2015 12:08:45
Printed : Dec 17, 2015 18:31:27
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.897	75587.0	618.45	118.339	xx
3,5 Dichlorobenzoic	7.940	87201.0	757.07	121.082	BB
4-Nitrophenol	8.737	47201.0	430.56	118.105	VV
DCPAA	9.417	437533.0	385.54	1216.540	BV
Dicamba	9.653	187091.0	1561.07	122.226	VV
MCPP	9.830	15594.0	2.52	6098.950	VV
MCPA	10.137	29193.0	5.09	6074.900	VV
DCP	10.570	66041.0	564.08	122.655	BV
2,4-D	10.960	83238.0	706.46	122.226	VV
Pentachlorophenol	11.423	671033.0	5597.35	123.448	BB
Silvex	11.923	287685.0	2321.63	123.539	BB
2,4,5-T	12.363	189958.0	1649.51	123.201	Bx
Chloramben	12.390	333171.0	2615.99	121.693	xB
2,4-DB	12.933	48184.0	401.89	123.058	BV
Dinoseb	13.283	179575.0	1494.07	122.837	VB
Bentazon	13.850	37168.0	305.54	122.837	Bx
Dacthal	14.267	293205.0	2450.60	118.963	VS
Picloram	14.313	445607.0	3490.13	122.837	SV
Acifluorfen	16.543	210544.0	1644.22	125.151	VB



JW 12/30/15

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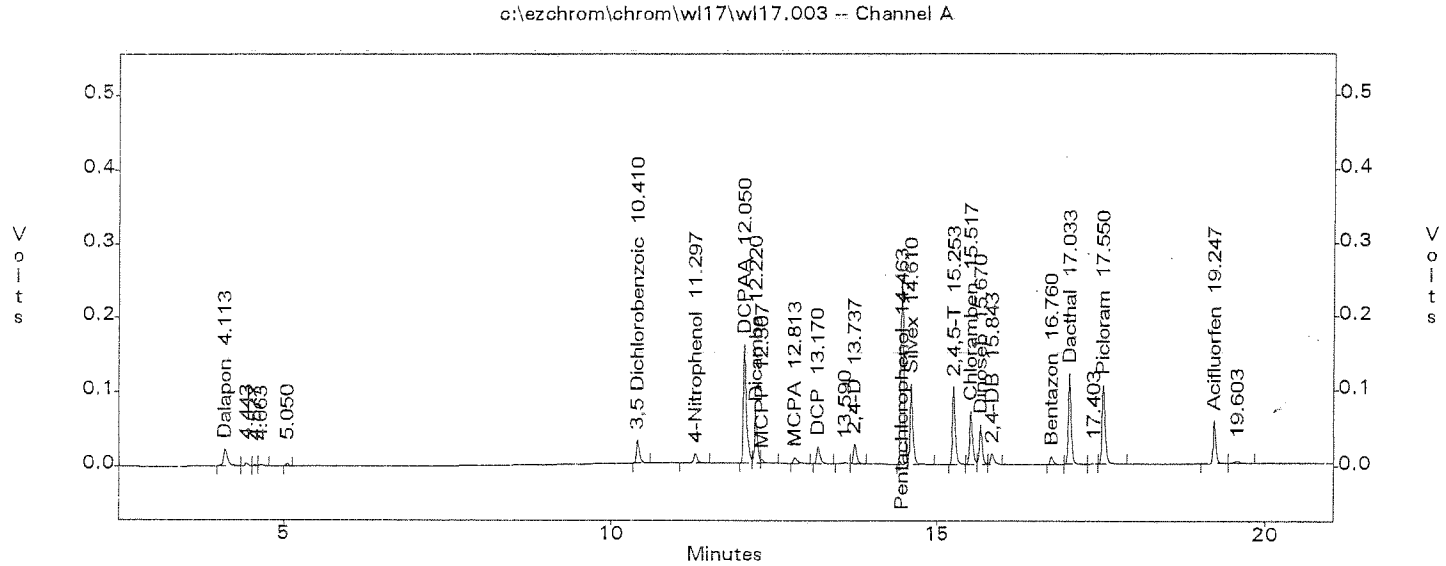
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.003
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L177
Acquired : Dec 17, 2015 11:41:14
Printed : Dec 17, 2015 18:31:38
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.113	97840.0	643.80	145.648	BV
3,5 Dichlorobenzoic	10.410	98683.0	677.65	149.024	BV
4-Nitrophenol	11.297	43517.0	308.97	145.360	VB
DCPAA	12.050	528693.0	382.88	1497.280	BV
Dicamba	12.220	206472.0	1344.60	150.432	Vx
MCPP	12.307	16430.0	2.16	7506.400	xV
MCPA	12.813	33050.0	5.07	7476.800	VB
DCP	13.170	74369.0	508.17	150.960	BV
2,4-D	13.737	87495.0	598.69	150.432	VB
Pentachlorophenol	14.463	802981.0	4844.71	151.936	BV
Silvex	14.610	319824.0	1957.30	152.048	VV
2,4,5-T	15.253	319835.0	2001.68	151.632	BV
Chloramben	15.517	224020.0	1388.68	149.776	VV
Dinoseb	15.670	156673.0	1048.62	151.184	VV
2,4-DB	15.843	50419.0	340.05	151.456	VV
Bentazon	16.760	34548.0	217.11	151.184	BV
Dacthal	17.033	369534.0	2312.00	146.416	VV
Picloram	17.550	350635.0	2085.24	151.184	VB
Acifluorfen	19.247	173626.0	1107.39	154.032	VV



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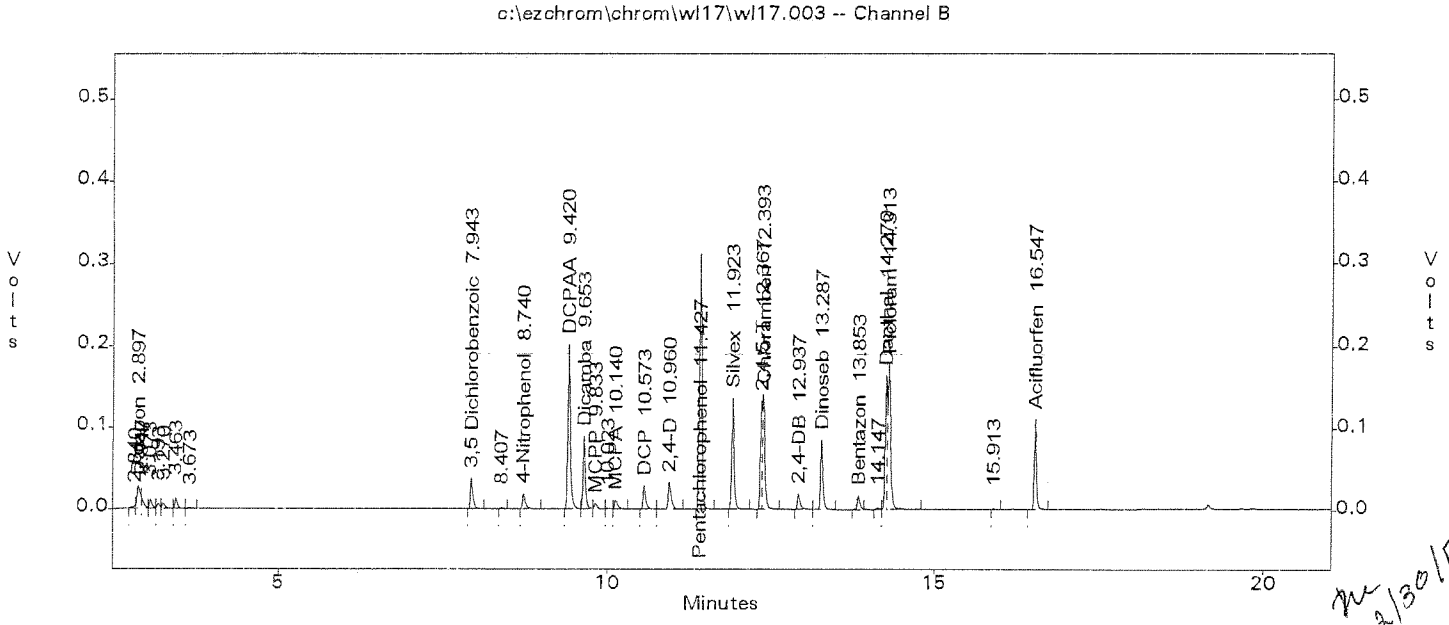
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.003
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L177
Acquired : Dec 17, 2015 11:41:14
Printed : Dec 17, 2015 18:31:38
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.897	94156.0	618.45	145.648	xx
3,5 Dichlorobenzoic	7.943	102708.0	757.07	149.024	BB
4-Nitrophenol	8.740	54933.0	430.56	145.360	BV
DCPAA	9.420	517707.0	385.54	1497.280	BV
Dicamba	9.653	223214.0	1561.07	150.432	VV
MCPP	9.833	18701.0	2.52	7506.400	VV
MCPA	10.140	33731.0	5.09	7476.800	VV
DCP	10.573	77906.0	564.08	150.960	BV
2,4-D	10.960	98298.0	706.46	150.432	VV
Pentachlorophenol	11.427	801155.0	5597.35	151.936	BB
Silvex	11.923	345259.0	2321.63	152.048	BB
2,4,5-T	12.367	237009.0	1649.51	151.632	Bx
Chloramben	12.393	388280.0	2615.99	149.776	xB
2,4-DB	12.937	57575.0	401.89	151.456	BV
Dinoseb	13.287	212480.0	1494.07	151.184	VB
Bentazon	13.853	44951.0	305.54	151.184	Bx
Dacthal	14.270	333708.0	2450.60	146.416	VS
Picloram	14.313	553309.0	3490.13	151.184	SV
Acifluorfen	16.547	254232.0	1644.22	154.032	VB



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BTT

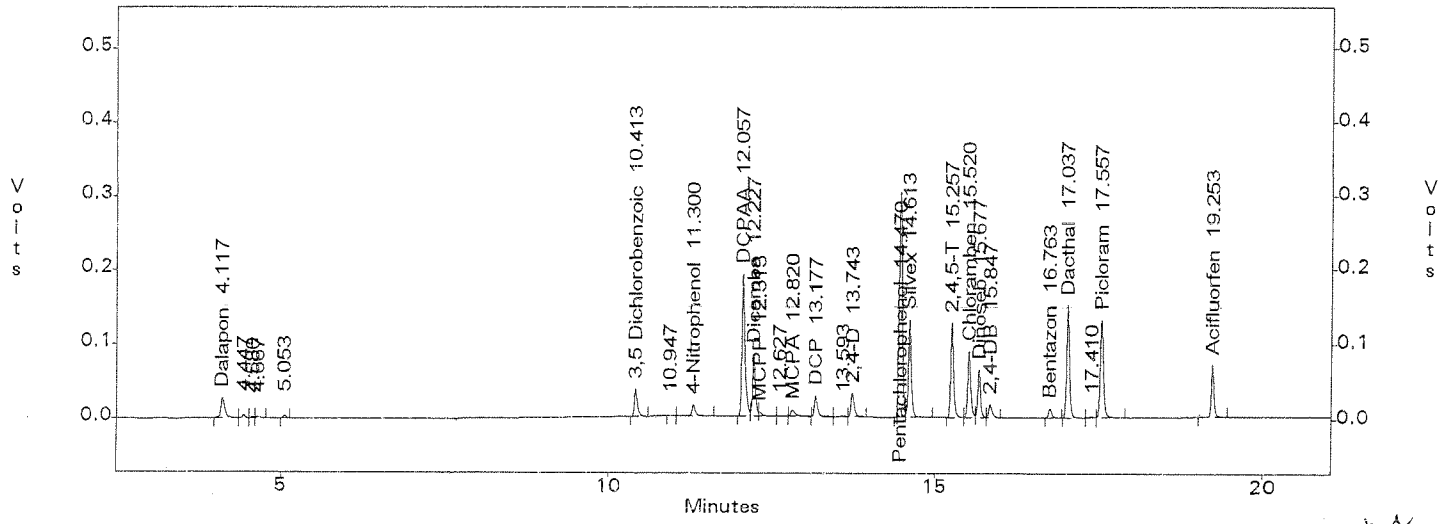
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.002
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L178
Acquired : Dec 17, 2015 11:13:44
Printed : Dec 17, 2015 18:31:49
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.117	118619.0	643.80	182.060	BV
3,5 Dichlorobenzoic	10.413	120131.0	677.65	186.280	BV
4-Nitrophenol	11.300	54478.0	308.97	181.700	VV
DCPAA	12.057	633215.0	382.88	1871.600	BV
Dicamba	12.227	254545.0	1344.60	188.040	Vx
MCPP	12.313	21579.0	2.16	9383.000	xV
MCPA	12.820	42254.0	5.07	9346.000	VV
DCP	13.177	93740.0	508.17	188.700	VV
2,4-D	13.743	106587.0	598.69	188.040	VB
Pentachlorophenol	14.470	987513.0	4844.71	189.920	BV
Silvex	14.613	397584.0	1957.30	190.060	VV
2,4,5-T	15.257	394952.0	2001.68	189.540	BV
Chloramben	15.520	280047.0	1388.68	187.220	VV
Dinoseb	15.677	189777.0	1048.62	188.980	VV
2,4-DB	15.847	61362.0	340.05	189.320	VV
Bentazon	16.763	42616.0	217.11	188.980	BV
Dacthal	17.037	461208.0	2312.00	183.020	VV
Picloram	17.557	439835.0	2085.24	188.980	VB
Acifluorfen	19.253	204945.0	1107.39	192.540	VV

c:\ezchrom\chrom\wl17\wl17.002 -- Channel A



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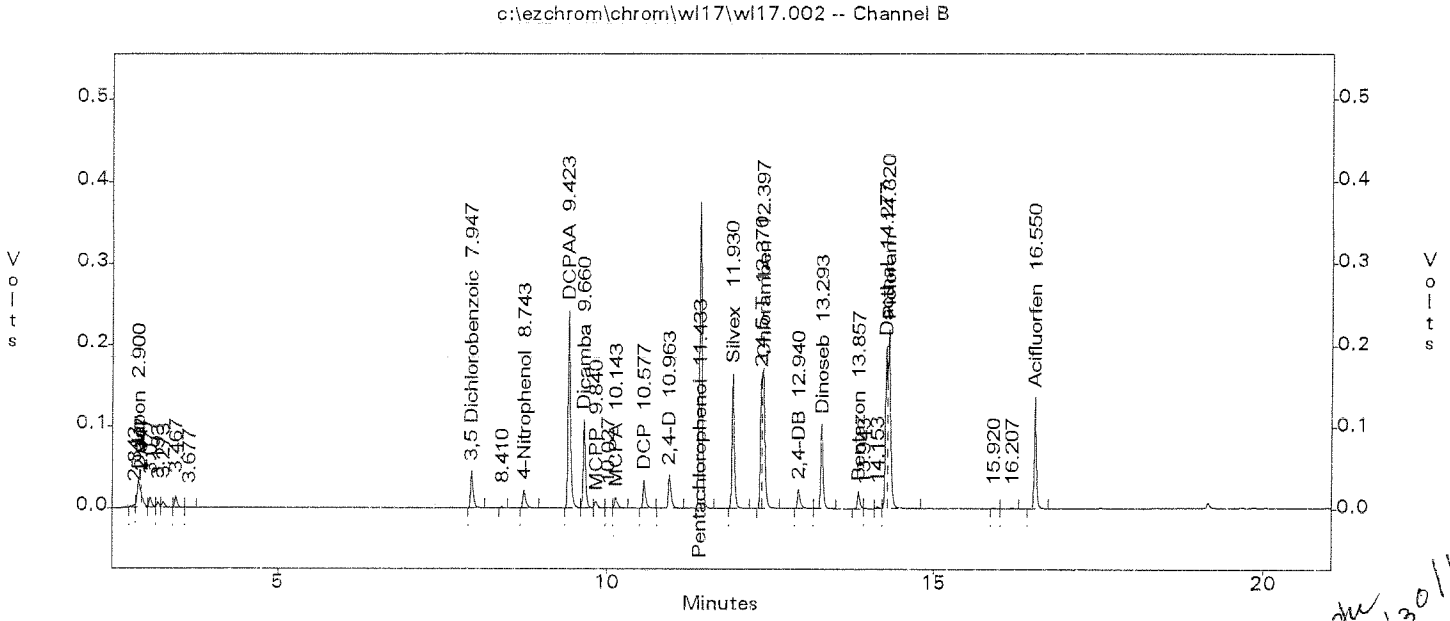
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.002
Method : c:\ezchrom\methods\he16l17.met
Sample ID : HE16L178
Acquired : Dec 17, 2015 11:13:44
Printed : Dec 17, 2015 18:31:50
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.900	110536.0	618.45	182.060	xx
3,5 Dichlorobenzoic	7.947	121575.0	757.07	186.280	BB
4-Nitrophenol	8.743	64719.0	430.56	181.700	BB
DCPAA	9.423	619079.0	385.54	1871.600	BV
Dicamba	9.660	267978.0	1561.07	188.040	VV
MCPP	9.840	22816.0	2.52	9383.000	VV
MCPA	10.143	39440.0	5.09	9346.000	VV
DCP	10.577	92747.0	564.08	188.700	BV
2,4-D	10.963	118024.0	706.46	188.040	VV
Pentachlorophenol	11.433	964217.0	5597.35	189.920	VB
Silvex	11.930	415630.0	2321.63	190.060	BB
2,4,5-T	12.370	274070.0	1649.51	189.540	Bx
Chloramben	12.397	478747.0	2615.99	187.220	xB
2,4-DB	12.940	69040.0	401.89	189.320	BV
Dinoseb	13.293	256045.0	1494.07	188.980	VB
Bentazon	13.857	54861.0	305.54	188.980	Bx
Dacthal	14.277	386903.0	2450.60	183.020	VS
Picloram	14.320	685657.0	3490.13	188.980	SV
Acifluorfen	16.550	309912.0	1644.22	192.540	VB



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SECOND SOURCE VERIFICATION

SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17010A 12/17/2015 14:54
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.100	4.084	4.116	91.0	643.800	57229	88.89	-2		15
3,5-Dichlorobenzo	10.390	10.369	10.411	93.1	677.700	58998	87.06	-7		15
4-Nitrophenol	11.277	11.257	11.297	90.8	309.000	29926	96.86	7		15
Dicamba	12.200	12.177	12.223	94.0	1344.6	125650	93.45	-1		15
Dichloroprop	13.153	13.131	13.175	94.3	508.200	50527	99.43	5		15
2,4-D	13.720	13.693	13.747	94.0	598.700	56018	93.57	-0		15
Pentachlorophenol	14.443	14.416	14.470	95.0	4844.7	500042	103.21	9		15
2,4,5-TP(Silvex)	14.590	14.569	14.611	95.0	1957.3	194932	99.59	5		15
Chloramben	15.497	15.475	15.519	93.6	1388.7	137697	99.16	6		15
2,4,5-T	15.233	15.211	15.255	94.8	2001.7	201913	100.87	6		15
2,4-DB	15.823	15.802	15.844	94.7	340.000	32951	96.90	2		15
Dinoseb	15.650	15.629	15.671	94.5	1048.6	105271	100.39	6		15
Bentazon	16.737	16.716	16.758	94.5	217.100	21222	97.75	3		15
Dacthal	17.010	16.989	17.031	91.5	2312.0	227994	98.61	8		15
Picloram	17.530	17.509	17.551	94.5	2085.2	198450	95.17	1		15
Acifluorfen	19.227	19.206	19.248	96.3	1107.4	106530	96.20	-0		15

12/30/15

SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17010B 12/17/2015 14:54
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.887	2.871	2.903	91.0	618.400	57120	92.36	1		15
3,5-Dichlorobenzo	7.927	7.906	7.948	93.1	757.100	60800	80.31	-14		15
4-Nitrophenol	8.723	8.692	8.754	90.8	430.600	40028	92.97	2		15
Dicamba	9.640	9.616	9.664	94.0	1561.1	147039	94.19	0		15
Dichloroprop	10.557	10.531	10.583	94.3	564.100	53942	95.63	1		15
2,4-D	10.943	10.921	10.965	94.0	706.500	62094	87.89	-7		15
Pentachlorophenol	11.410	11.386	11.434	95.0	5597.4	526769	94.11	-1		15
2,4,5-TP(Silvex)	11.907	11.883	11.931	95.0	2321.6	225667	97.20	2		15
Chloramben	12.373	12.347	12.399	93.6	2616.0	262061	100.18	7		15
2,4,5-T	12.350	12.326	12.374	94.8	1649.5	152362	92.37	-3		15
2,4-DB	12.923	12.897	12.949	94.7	401.900	35546	88.45	-7		15
Dinoseb	13.270	13.246	13.294	94.5	1494.1	148259	99.23	5		15
Bentazon	13.837	13.810	13.864	94.5	305.500	28438	93.08	-1		15
Dacthal	14.253	14.226	14.280	91.5	2450.6	236317	96.43	5		15
Picloram	14.300	14.274	14.326	94.5	3490.1	336314	96.36	2		15
Acifluorfen	16.530	16.506	16.554	96.3	1644.2	161903	98.47	2		15

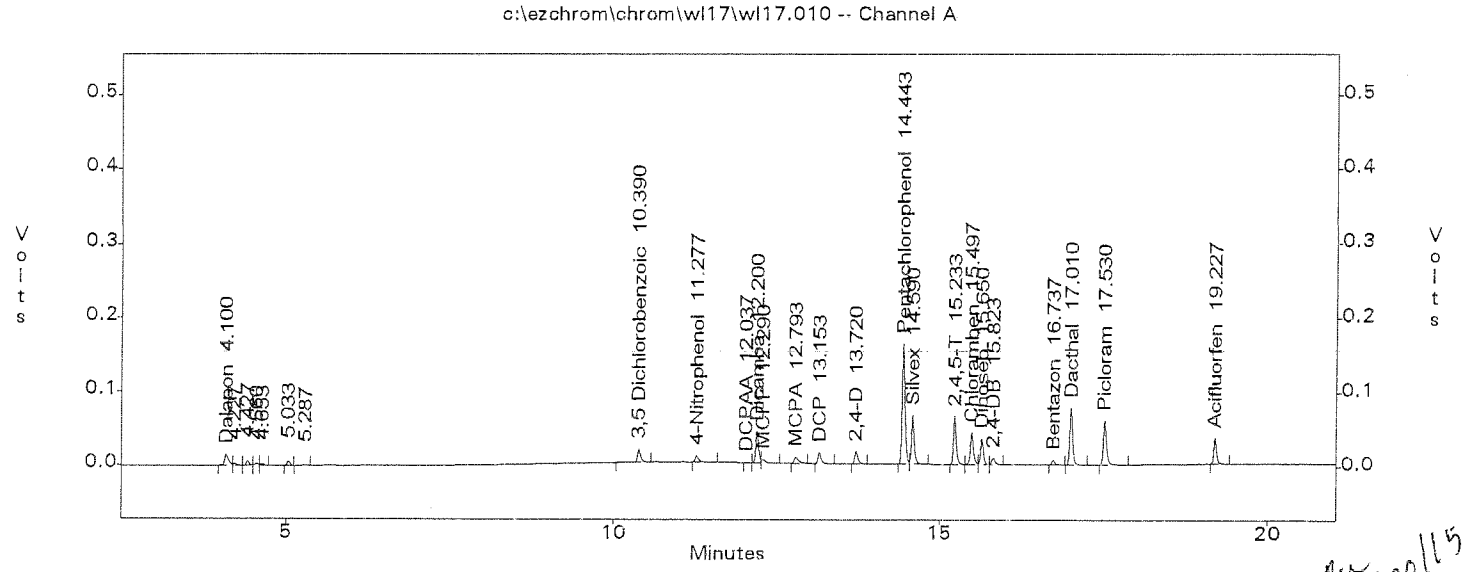
TM 12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.010
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17001
Acquired : Dec 17, 2015 14:54:43
Printed : Dec 17, 2015 18:34:19
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.100	57229.0	643.80	88.893	BV
3,5 Dichlorobenzoic	10.390	58998.0	677.65	87.062	BV
4-Nitrophenol	11.277	29926.0	308.97	96.858	BB
DCPAA	12.037	2510.0	382.88	6.556	BV
Dicamba	12.200	125650.0	1344.60	93.448	VV
MCPP	12.290	17926.0	2.16	8296.689	VB
MCPA	12.793	39506.0	5.07	7785.667	BV
DCP	13.153	50527.0	508.17	99.430	VV
2,4-D	13.720	56018.0	598.69	93.568	BB
Pentachlorophenol	14.443	500042.0	4844.71	103.214	BV
Silvex	14.590	194932.0	1957.30	99.592	VB
2,4,5-T	15.233	201913.0	2001.68	100.872	BV
Chloramben	15.497	137697.0	1388.68	99.156	VV
Dinoseb	15.650	105271.0	1048.62	100.390	VV
2,4-DB	15.823	32951.0	340.05	96.901	VV
Bentazon	16.737	21222.0	217.11	97.748	BV
Dacthal	17.010	227994.0	2312.00	98.613	VV
Picloram	17.530	198450.0	2085.24	95.169	VV
Acifluorfen	19.227	106530.0	1107.39	96.200	BV



Pu 12/30/15

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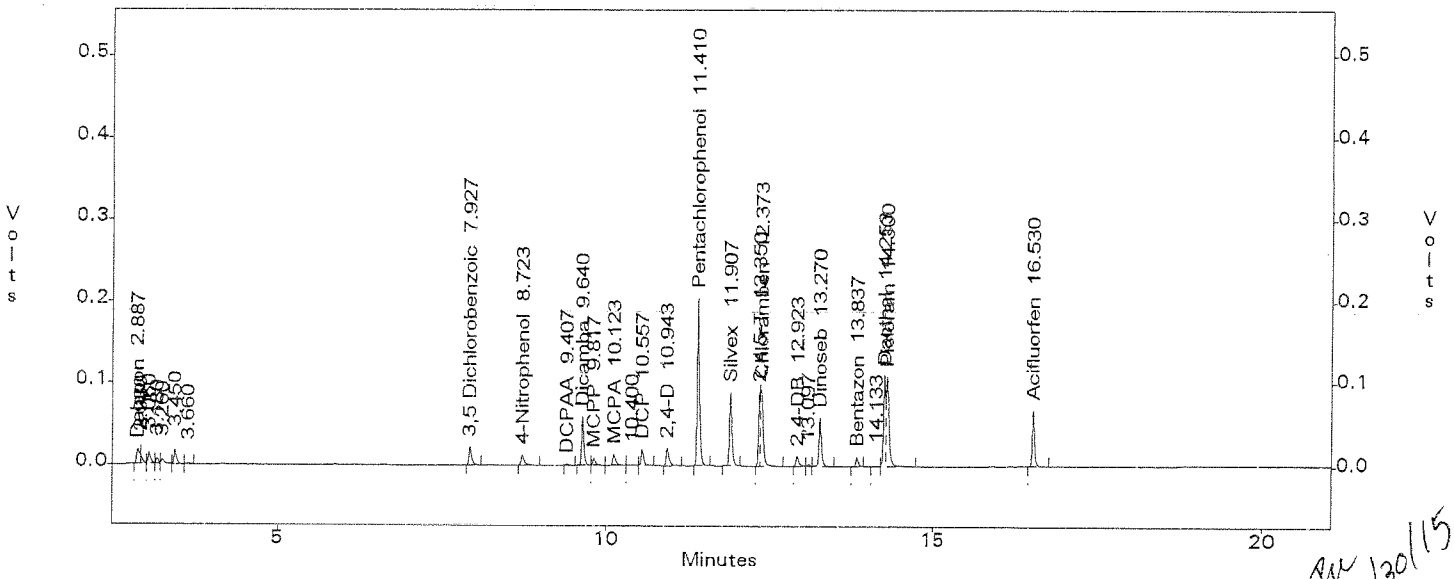
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.010
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17001
Acquired : Dec 17, 2015 14:54:43
Printed : Dec 17, 2015 18:34:19
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.887	57120.0	618.45	92.360	Bx
3,5 Dichlorobenzoic	7.927	60800.0	757.07	80.310	BB
4-Nitrophenol	8.723	40028.0	430.56	92.968	BV
DCPAA	9.407	4741.0	385.54	12.297	BV
Dicamba	9.640	147039.0	1561.07	94.191	VV
MCPP	9.817	23421.0	2.52	9277.546	VV
MCPA	10.123	42285.0	5.09	8310.917	VV
DCP	10.557	53942.0	564.08	95.628	VB
2,4-D	10.943	62094.0	706.46	87.895	BV
Pentachlorophenol	11.410	526769.0	5597.35	94.110	BV
Silvex	11.907	225667.0	2321.63	97.202	BV
2,4,5-T	12.350	152362.0	1649.51	92.368	Bx
Chloramben	12.373	262061.0	2615.99	100.177	xB
2,4-DB	12.923	35546.0	401.89	88.446	BV
Dinoseb	13.270	148259.0	1494.07	99.232	VB
Bentazon	13.837	28438.0	305.54	93.076	Bx
Dacthal	14.253	236317.0	2450.60	96.432	VS
Picloram	14.300	336314.0	3490.13	96.361	SB
Acifluorfen	16.530	161903.0	1644.22	98.468	VB

c:\ezchrom\chrom\wl17\wl17.010 -- Channel B



12/30/15
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SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17011A 12/17/2015 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
MCPP	12.293	12.270	12.316	4693.0	2.160	8899	4118.72	-12		15
MCPA	12.797	12.775	12.819	4673.0	5.070	24590	4846.09	4		15

12/30/15

SECOND SOURCE VERIFICATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WL17011B 12/17/2015 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
MCPP	9.817	9.796	9.838	4693.0	2.520	12328	4883.38	4		15
MCPA	10.123	10.099	10.147	4673.0	5.090	25772	5065.37	8		15

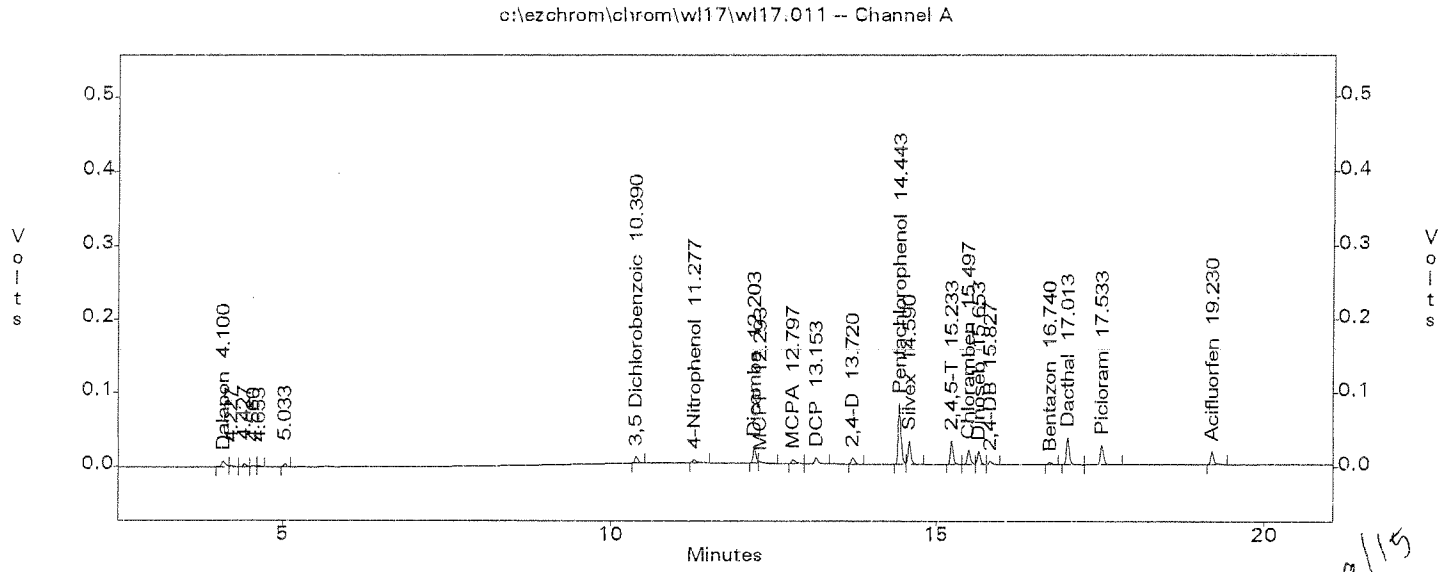
12/30/15

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.011
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17002
Acquired : Dec 17, 2015 15:22:22
Printed : Dec 17, 2015 18:35:11
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.100	30302.0	643.80	47.068	BV
3,5 Dichlorobenzoic	10.390	29605.0	677.65	43.688	BV
4-Nitrophenol	11.277	15903.0	308.97	51.471	BB
DCPAA	12.043	0.0	0.00	0.000	--
Dicamba	12.203	63636.0	1344.60	47.327	VV
MCPP	12.293	8899.0	2.16	4118.724	VB
MCPA	12.797	24590.0	5.07	4846.087	BV
DCP	13.153	28313.0	508.17	55.716	VB
2,4-D	13.720	29603.0	598.69	49.446	BB
Pentachlorophenol	14.443	244298.0	4844.71	50.426	BV
Silvex	14.590	93654.0	1957.30	47.849	VB
2,4,5-T	15.233	99367.0	2001.68	49.642	BV
Chloramben	15.497	66800.0	1388.68	48.103	VV
Dinoseb	15.653	54759.0	1048.62	52.220	VV
2,4-DB	15.827	16824.0	340.05	49.475	VV
Bentazon	16.740	10652.0	217.11	49.063	BV
Dacthal	17.013	107611.0	2312.00	46.545	VV
Picloram	17.533	91095.0	2085.24	43.686	VB
Acifluorfen	19.230	55981.0	1107.39	50.552	BV



12/30/15

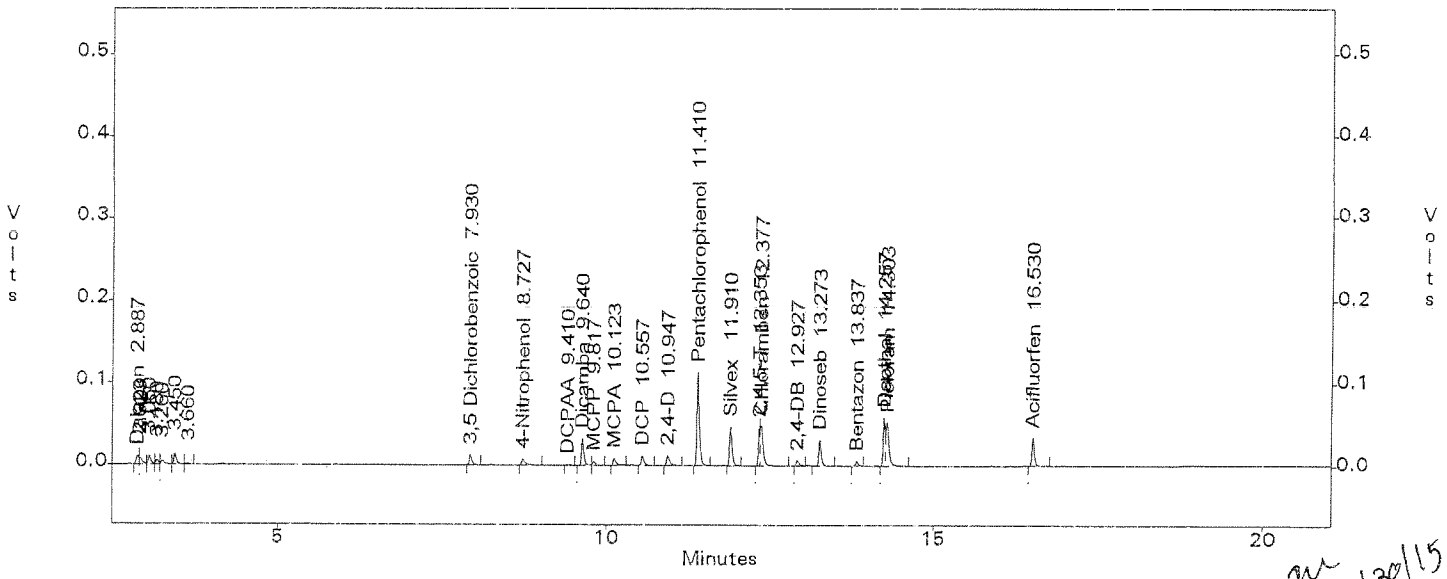
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wl17\wl17.011
Method : c:\ezchrom\methods\he16l17.met
Sample ID : IHE16L17002
Acquired : Dec 17, 2015 15:22:22
Printed : Dec 17, 2015 18:35:11
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.887	24683.0	618.45	39.911	Bx
3,5 Dichlorobenzoic	7.930	34194.0	757.07	45.166	BB
4-Nitrophenol	8.727	23284.0	430.56	54.079	BB
DCPAA	9.410	2427.0	385.54	6.295	BV
Dicamba	9.640	79716.0	1561.07	51.065	VV
MCPP	9.817	12328.0	2.52	4883.377	VV
MCPA	10.123	25772.0	5.09	5065.365	BV
DCP	10.557	30418.0	564.08	53.925	VB
2,4-D	10.947	34849.0	706.46	49.329	BV
Pentachlorophenol	11.410	288217.0	5597.35	51.492	BV
Silvex	11.910	118881.0	2321.63	51.206	BV
2,4,5-T	12.353	82018.0	1649.51	49.723	Bx
Chloramben	12.377	139920.0	2615.99	53.486	xV
2,4-DB	12.927	19337.0	401.89	48.115	VV
Dinoseb	13.273	80495.0	1494.07	53.876	VB
Bentazon	13.837	14561.0	305.54	47.657	Bx
Dacthal	14.257	128996.0	2450.60	52.638	VS
Picloram	14.303	167923.0	3490.13	48.114	SB
Acifluorfen	16.530	83820.0	1644.22	50.979	BB

c:\ezchrom\chrom\wl17\wl17.011 -- Channel B



12/30/15

DAILY CALIBRATIONS

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19002A 02/19/2016 14:05
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.103	4.087	4.119	91.0	643.800	58186	90.38	-1		20
3,5-Dichlorobenzo	10.397	10.376	10.418	93.1	677.700	59184	87.34	-6		20
4-Nitrophenol	11.283	11.263	11.303	90.8	309.000	29604	95.82	5		20
Dicamba	12.203	12.180	12.226	94.0	1344.6	119656	88.99	-5		20
MCPP	12.290	12.267	12.313	4693.0	2.160	11405	5278.58	12		20
MCPA	12.797	12.775	12.819	4673.0	5.070	22983	4529.39	-3		20
Dichloroprop	13.153	13.131	13.175	94.3	508.200	44780	88.12	-7		20
2,4-D	13.720	13.693	13.747	94.0	598.700	52316	87.38	-7		20
Pentachlorophenol	14.443	14.416	14.470	95.0	4844.7	469004	96.81	2		20
2,4,5-TP(Silvex)	14.590	14.569	14.611	95.0	1957.3	178287	91.09	-4		20
Chloramben	15.497	15.475	15.519	93.6	1388.7	123352	88.83	-5		20
2,4,5-T	15.233	15.211	15.255	94.8	2001.7	182820	91.33	-4		20
2,4-DB	15.823	15.802	15.844	94.7	340.000	27779	81.69	-14		20
Dinoseb	15.650	15.629	15.671	94.5	1048.6	109516	104.44	11		20
Bentazon	16.737	16.716	16.758	94.5	217.100	18595	85.65	-9		20
Dacthal	17.010	16.989	17.031	91.5	2312.0	205861	89.04	-3		20
Picloram	17.530	17.509	17.551	94.5	2085.2	194479	93.26	-1		20
Acifluorfen	19.227	19.206	19.248	96.3	1107.4	120245	108.58	13		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	12.033	12.010	12.056	935.8	382.900	329848	861.50	-8		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19002B 02/19/2016 14:05
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.883	2.867	2.899	91.0	618.400	56680	91.65	1		20
3,5-Dichlorobenzo	7.920	7.899	7.941	93.1	757.100	70696	93.38	0		20
4-Nitrophenol	8.717	8.686	8.748	90.8	430.600	45594	105.89	17		20
Dicamba	9.630	9.606	9.654	94.0	1561.1	144631	92.65	-1		20
MCPP	9.807	9.786	9.828	4693.0	2.520	13100	5189.18	11		20
MCPA	10.113	10.089	10.137	4673.0	5.090	26717	5251.10	12		20
Dichloroprop	10.547	10.521	10.573	94.3	564.100	53736	95.26	1		20
2,4-D	10.937	10.915	10.959	94.0	706.500	65041	92.07	-2		20
Pentachlorophenol	11.400	11.376	11.424	95.0	5597.4	537803	96.08	1		20
2,4,5-TP(Silvex)	11.897	11.873	11.921	95.0	2321.6	229580	98.89	4		20
Chloramben	12.363	12.337	12.389	93.6	2616.0	256856	98.19	5		20
2,4,5-T	12.340	12.316	12.364	94.8	1649.5	157210	95.31	1		20
2,4-DB	12.910	12.884	12.936	94.7	401.900	38596	96.04	1		20
Dinoseb	13.257	13.233	13.281	94.5	1494.1	156931	105.04	11		20
Bentazon	13.820	13.793	13.847	94.5	305.500	29365	96.11	2		20
Dacthal	14.237	14.210	14.264	91.5	2450.6	233097	95.12	4		20
Picloram	14.283	14.257	14.309	94.5	3490.1	339631	97.31	3		20
Acifluorfen	16.510	16.486	16.534	96.3	1644.2	170982	103.99	8		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.393	9.369	9.417	935.8	385.500	346647	899.13	-4		20

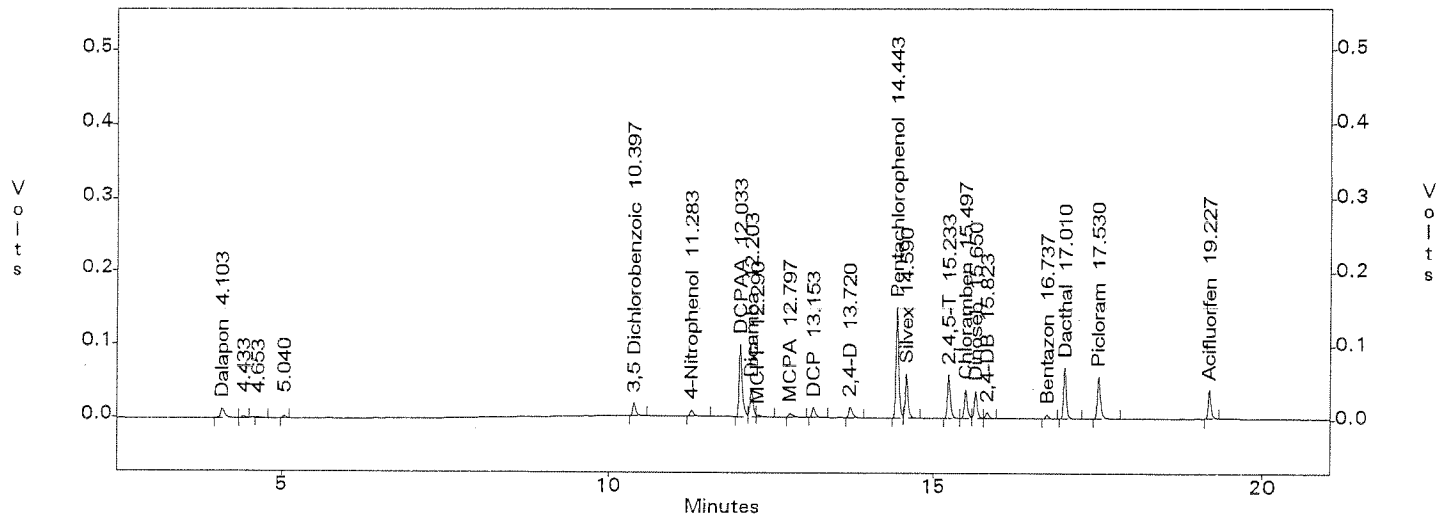
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.002
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17049
Acquired : Feb 19, 2016 14:05:23
Printed : Feb 19, 2016 14:30:49
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.103	58186.0	643.80	90.379	BV
3,5 Dichlorobenzoic	10.397	59184.0	677.65	87.337	BV
4-Nitrophenol	11.283	29604.0	308.97	95.815	BB
DCPAA	12.033	329848.0	382.88	861.502	BV
Dicamba	12.203	119656.0	1344.60	88.990	Vx
MCPP	12.290	11405.0	2.16	5278.575	xV
MCPA	12.797	22983.0	5.07	4529.387	Bx
DCP	13.153	44780.0	508.17	88.120	vv
2,4-D	13.720	52316.0	598.69	87.384	VB
Pentachlorophenol	14.443	469004.0	4844.71	96.807	BV
Silvex	14.590	178287.0	1957.30	91.088	VI
2,4,5-T	15.233	182820.0	2001.68	91.333	BV
Chloramben	15.497	123352.0	1388.68	88.827	VV
Dinoseb	15.650	109516.0	1048.62	104.438	VV
2,4-DB	15.823	27779.0	340.05	81.692	VV
Bentazon	16.737	18595.0	217.11	85.648	Vx
Dacthal	17.010	205861.0	2312.00	89.040	VV
Picloram	17.530	194479.0	2085.24	93.265	VB
Acifluorfen	19.227	120245.0	1107.39	108.585	vv

c:\ezchrom\chrom\wb19\wb19.002 -- Channel A



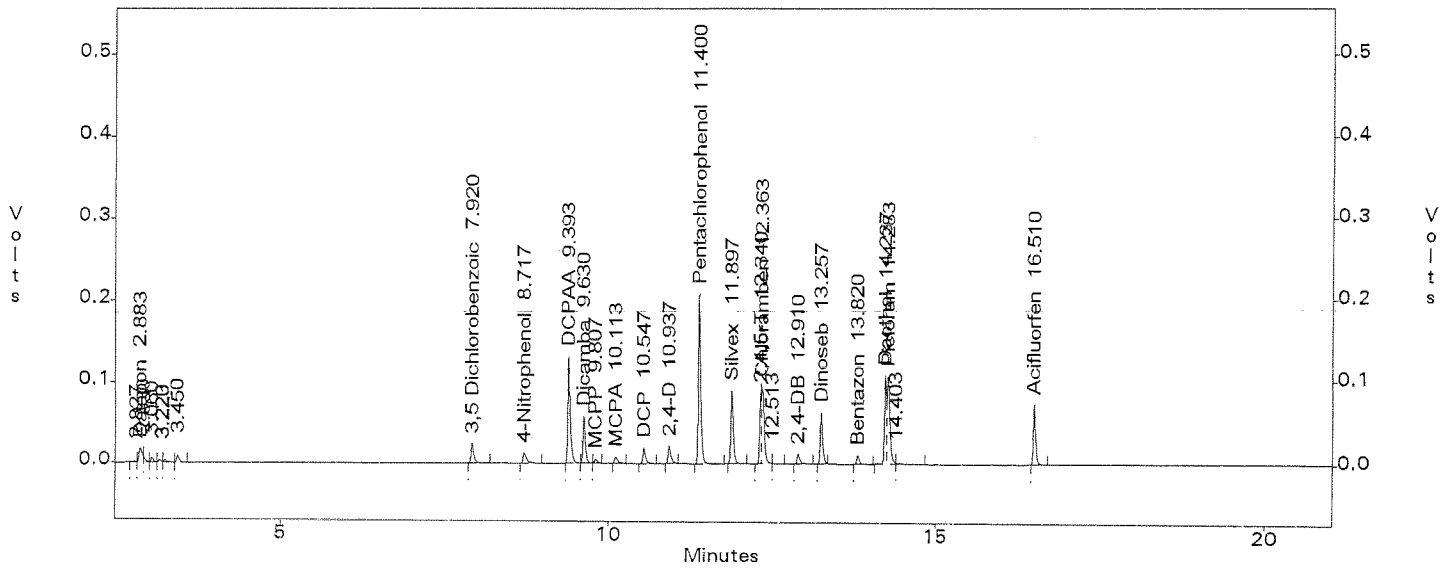
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.002
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17049
Acquired : Feb 19, 2016 14:05:23
Printed : Feb 19, 2016 14:30:49
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.883	56680.0	618.45	91.648	xx
3,5 Dichlorobenzoic	7.920	70696.0	757.07	93.381	BV
4-Nitrophenol	8.717	45594.0	430.56	105.895	BV
DCPAA	9.393	346647.0	385.54	899.132	BV
Dicamba	9.630	144631.0	1561.07	92.649	VV
MCPP	9.807	13100.0	2.52	5189.183	vv
MCPA	10.113	26717.0	5.09	5251.100	BI
DCP	10.547	53736.0	564.08	95.263	BV
2,4-D	10.937	65041.0	706.46	92.066	VI
Pentachlorophenol	11.400	537803.0	5597.35	96.082	BV
Silvex	11.897	229580.0	2321.63	98.887	vv
2,4,5-T	12.340	157210.0	1649.51	95.307	Bx
Chloramben	12.363	256856.0	2615.99	98.187	xx
2,4-DB	12.910	38596.0	401.89	96.035	vv
Dinoseb	13.257	156931.0	1494.07	105.036	VI
Bentazon	13.820	29365.0	305.54	96.110	vv
Dacthal	14.237	233097.0	2450.60	95.118	Vx
Picloram	14.283	339631.0	3490.13	97.312	xx
Acifluorfen	16.510	170982.0	1644.22	103.990	BB

c:\ezchrom\chrom\wb19\wb19.002 -- Channel B



CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19015A 02/19/2016 21:25
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.097	4.081	4.113	91.0	643.800	57087	88.67	-3		20
3,5-Dichlorobenzo	10.387	10.366	10.408	93.1	677.700	57049	84.19	-10		20
4-Nitrophenol	11.273	11.253	11.293	90.8	309.000	28791	93.18	3		20
Dicamba	12.193	12.170	12.216	94.0	1344.6	116384	86.56	-8		20
MCPP	12.280	12.257	12.303	4693.0	2.160	9531	4411.23	-6		20
MCPA	12.790	12.768	12.812	4673.0	5.070	22071	4349.65	-7		20
Dichloroprop	13.147	13.125	13.169	94.3	508.200	42953	84.53	-10		20
2,4-D	13.713	13.686	13.740	94.0	598.700	51062	85.29	-9		20
Pentachlorophenol	14.433	14.406	14.460	95.0	4844.7	448736	92.62	-2		20
2,4,5-TP(Silvex)	14.583	14.562	14.604	95.0	1957.3	170789	87.26	-8		20
Chloramben	15.490	15.468	15.512	93.6	1388.7	119084	85.75	-8		20
2,4,5-T	15.227	15.205	15.249	94.8	2001.7	177917	88.88	-6		20
2,4-DB	15.817	15.796	15.838	94.7	340.000	28915	85.03	-10		20
Dinoseb	15.643	15.622	15.664	94.5	1048.6	110288	105.17	11		20
Bentazon	16.730	16.709	16.751	94.5	217.100	17711	81.58	-14		20
Dacthal	17.003	16.982	17.024	91.5	2312.0	199098	86.11	-6		20
Picloram	17.523	17.502	17.544	94.5	2085.2	196637	94.30	-0		20
Acifluorfen	19.217	19.196	19.238	96.3	1107.4	131422	118.68	23	* NT	20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	12.023	12.000	12.046	935.8	382.900	319343	834.07	-11		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19015B 02/19/2016 21:25
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.880	2.864	2.896	91.0	618.400	56805	91.85	1		20
3,5-Dichlorobenzo	7.913	7.892	7.934	93.1	757.100	67818	89.58	-4		20
4-Nitrophenol	8.710	8.679	8.741	90.8	430.600	43010	99.89	10		20
Dicamba	9.620	9.596	9.644	94.0	1561.1	137718	88.22	-6		20
MCPP	9.800	9.779	9.821	4693.0	2.520	13082	5182.05	10		20
MCPA	10.107	10.083	10.131	4673.0	5.090	25713	5053.77	8		20
Dichloroprop	10.537	10.511	10.563	94.3	564.100	51485	91.27	-3		20
2,4-D	10.930	10.908	10.952	94.0	706.500	64638	91.50	-3		20
Pentachlorophenol	11.390	11.366	11.414	95.0	5597.4	512206	91.51	-4		20
2,4,5-TP(Silvex)	11.890	11.866	11.914	95.0	2321.6	218919	94.29	-1		20
Chloramben	12.353	12.327	12.379	93.6	2616.0	241223	92.21	-1		20
2,4,5-T	12.340	12.316	12.364	94.8	1649.5	156394	94.81	0		20
2,4-DB	12.943	12.917	12.969	94.7	401.900	36440	90.67	-4		20
Dinoseb	13.247	13.223	13.271	94.5	1494.1	154012	103.08	9		20
Bentazon	13.810	13.783	13.837	94.5	305.500	28740	94.06	-0		20
Dacthal	14.230	14.203	14.257	91.5	2450.6	226411	92.39	1		20
Picloram	14.277	14.251	14.303	94.5	3490.1	328048	93.99	-1		20
Acifluorfen	16.500	16.476	16.524	96.3	1644.2	176282	107.21	11		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.383	9.359	9.407	935.8	385.500	332597	862.69	-8		20

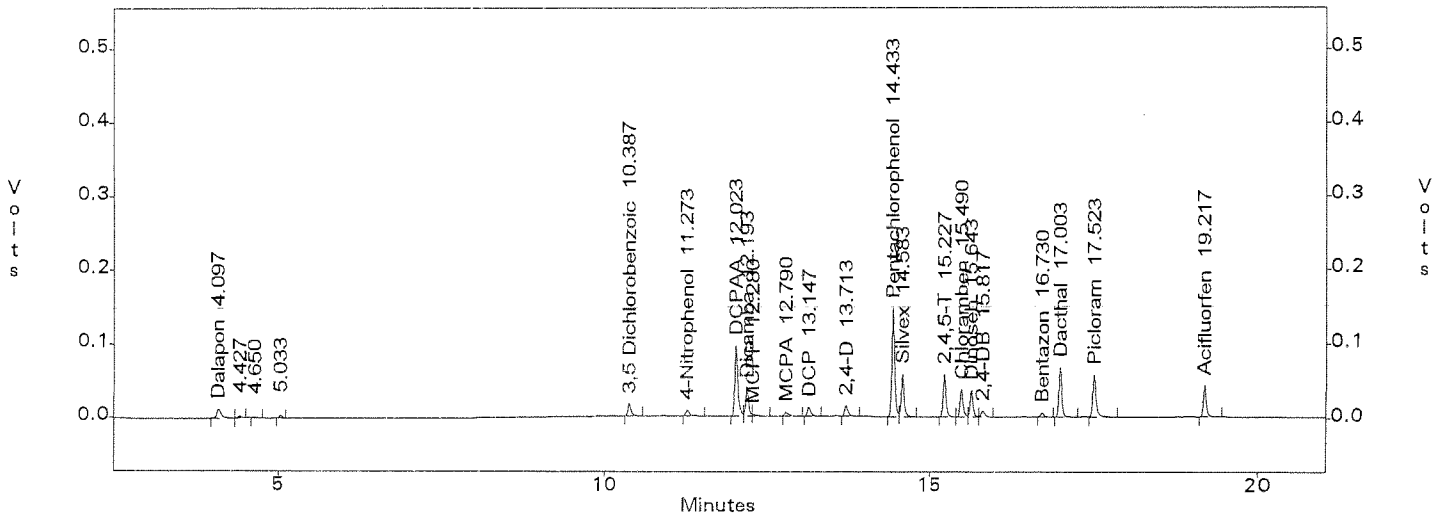
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.015
Method : c:\ezchrom\chrom\wb12\he16117.met
Sample ID : CHE16L17050
Acquired : Feb 19, 2016 21:25:32
Printed : Feb 22, 2016 08:56:33
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.097	57087.0	643.80	88.672	BV
3,5 Dichlorobenzoic	10.387	57049.0	677.65	84.186	BV
4-Nitrophenol	11.273	28791.0	308.97	93.184	BB
DCPAA	12.023	319343.0	382.88	834.065	BV
Dicamba	12.193	116384.0	1344.60	86.557	Vx
MCPP	12.280	9531.0	2.16	4411.232	xV
MCPA	12.790	22071.0	5.07	4349.654	Bx
DCP	13.147	42953.0	508.17	84.525	vv
2,4-D	13.713	51062.0	598.69	85.290	VB
Pentachlorophenol	14.433	448736.0	4844.71	92.624	BV
Silvex	14.583	170789.0	1957.30	87.257	VI
2,4,5-T	15.227	177917.0	2001.68	88.884	BV
Chloramben	15.490	119084.0	1388.68	85.753	VV
Dinoseb	15.643	110288.0	1048.62	105.174	VV
2,4-DB	15.817	28915.0	340.05	85.032	VV
Bentazon	16.730	17711.0	217.11	81.576	Bx
Dacthal	17.003	199098.0	2312.00	86.115	VV
Picloram	17.523	196637.0	2085.24	94.300	VB
Acifluorfen	19.217	131422.0	1107.39	118.678	vv

c:\ezchrom\chrom\wb19\wb19.015 -- Channel A



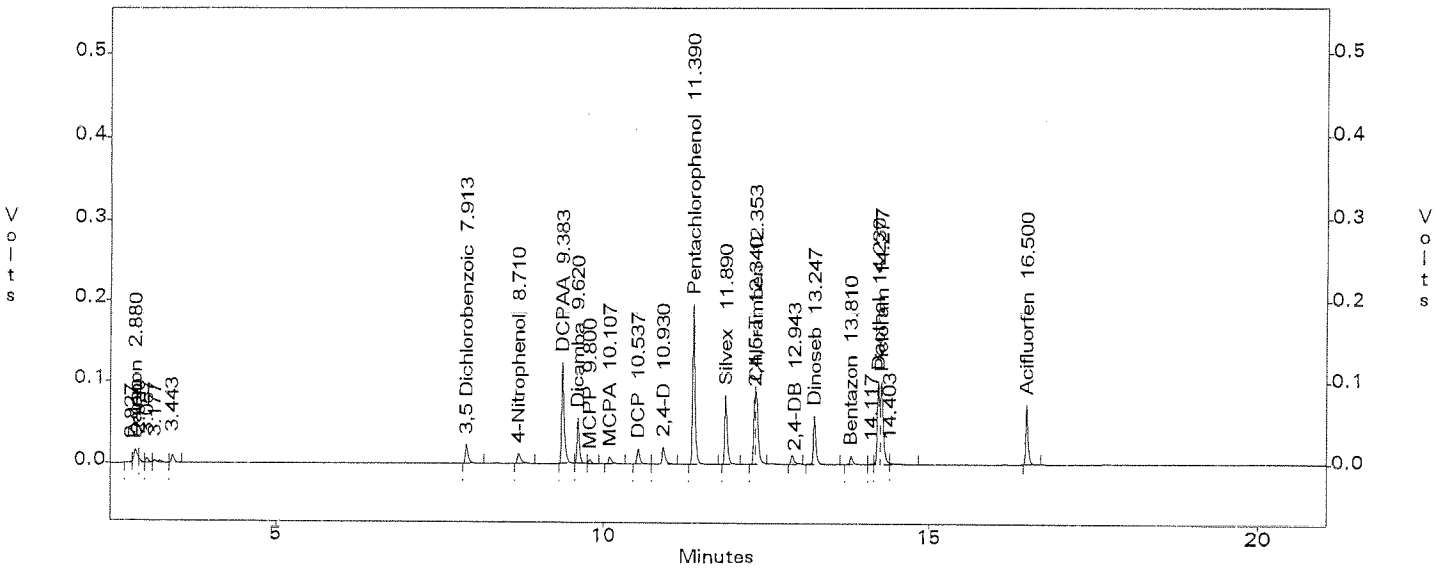
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.015
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17050
Acquired : Feb 19, 2016 21:25:32
Printed : Feb 22, 2016 08:56:33
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.880	56805.0	618.45	91.851	xx
3,5 Dichlorobenzoic	7.913	67818.0	757.07	89.579	BV
4-Nitrophenol	8.710	43010.0	430.56	99.894	BV
DCPAA	9.383	332597.0	385.54	862.689	BV
Dicamba	9.620	137718.0	1561.07	88.220	VV
MCPP	9.800	13082.0	2.52	5182.053	vv
MCPA	10.107	25713.0	5.09	5053.769	xB
DCP	10.537	51485.0	564.08	91.273	BV
2,4-D	10.930	64638.0	706.46	91.496	VV
Pentachlorophenol	11.390	512206.0	5597.35	91.509	VV
Silvex	11.890	218919.0	2321.63	94.295	vv
2,4,5-T	12.340	156394.0	1649.51	94.812	Bx
Chloramben	12.353	241223.0	2615.99	92.211	xx
2,4-DB	12.943	36440.0	401.89	90.671	vv
Dinoseb	13.247	154012.0	1494.07	103.082	SV
Bentazon	13.810	28740.0	305.54	94.064	vv
Dacthal	14.230	226411.0	2450.60	92.390	xx
Picloram	14.277	328048.0	3490.13	93.993	xx
Acifluorfen	16.500	176282.0	1644.22	107.213	BB

c:\ezchrom\chrom\wb19\wb19.015 -- Channel B



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CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19017A 02/22/2016 12:17
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.067	4.051	4.083	91.0	643.800	58066	90.19	-1		20
3,5-Dichlorobenzo	10.333	10.312	10.354	93.1	677.700	63655	93.93	1		20
4-Nitrophenol	11.220	11.200	11.240	90.8	309.000	29981	97.04	7		20
Dicamba	12.140	12.117	12.163	94.0	1344.6	129852	96.57	3		20
MCPP	12.227	12.204	12.250	4693.0	2.160	10984	5083.72	8		20
MCPA	12.733	12.711	12.755	4673.0	5.070	24303	4789.53	2		20
Dichloroprop	13.090	13.068	13.112	94.3	508.200	47474	93.42	-1		20
2,4-D	13.657	13.630	13.684	94.0	598.700	54319	90.73	-3		20
Pentachlorophenol	14.373	14.346	14.400	95.0	4844.7	506728	104.59	10		20
2,4,5-TP(Silvex)	14.523	14.502	14.544	95.0	1957.3	193995	99.11	4		20
Chloramben	15.430	15.408	15.452	93.6	1388.7	131333	94.57	1		20
2,4,5-T	15.167	15.145	15.189	94.8	2001.7	192056	95.95	1		20
2,4-DB	15.757	15.736	15.778	94.7	340.000	29352	86.32	-9		20
Dinoseb	15.583	15.562	15.604	94.5	1048.6	103520	98.72	4		20
Bentazon	16.667	16.646	16.688	94.5	217.100	20046	92.33	-2		20
Dacthal	16.940	16.919	16.961	91.5	2312.0	225467	97.52	7		20
Picloram	17.463	17.442	17.484	94.5	2085.2	179913	86.28	-9		20
Acifluorfen	19.157	19.136	19.178	96.3	1107.4	96403	87.06	-10		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	11.970	11.947	11.993	935.8	382.900	353597	923.53	-1		20

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Columm : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19017B 02/22/2016 12:17
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.860	2.844	2.876	91.0	618.400	60183	97.31	7		20
3,5-Dichlorobenzo	7.870	7.849	7.891	93.1	757.100	75487	99.71	7		20
4-Nitrophenol	8.667	8.636	8.698	90.8	430.600	44766	103.97	14		20
Dicamba	9.577	9.553	9.601	94.0	1561.1	156115	100.00	6		20
MCPP	9.757	9.736	9.778	4693.0	2.520	13229	5240.28	12		20
MCPA	10.060	10.036	10.084	4673.0	5.090	26468	5202.16	11		20
Dichloroprop	10.493	10.467	10.519	94.3	564.100	58285	103.33	10		20
2,4-D	10.887	10.865	10.909	94.0	706.500	68822	97.42	4		20
Pentachlorophenol	11.343	11.319	11.367	95.0	5597.4	567488	101.39	7		20
2,4,5-TP(Silvex)	11.843	11.819	11.867	95.0	2321.6	242340	104.38	10		20
Chloramben	12.307	12.281	12.333	93.6	2616.0	268745	102.73	10		20
2,4,5-T	12.293	12.269	12.317	94.8	1649.5	158451	96.06	1		20
2,4-DB	12.857	12.831	12.883	94.7	401.900	39378	97.98	4		20
Dinoseb	13.200	13.176	13.224	94.5	1494.1	157258	105.25	11		20
Bentazon	13.763	13.736	13.790	94.5	305.500	29288	95.86	1		20
Dacthal	14.180	14.153	14.207	91.5	2450.6	251977	102.82	12		20
Picloram	14.230	14.204	14.256	94.5	3490.1	307742	88.18	-7		20
Acifluorfen	16.453	16.429	16.477	96.3	1644.2	138633	84.32	-12		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
2,4-DCPAA	9.343	9.319	9.367	935.8	385.500	367859	954.15	2		20

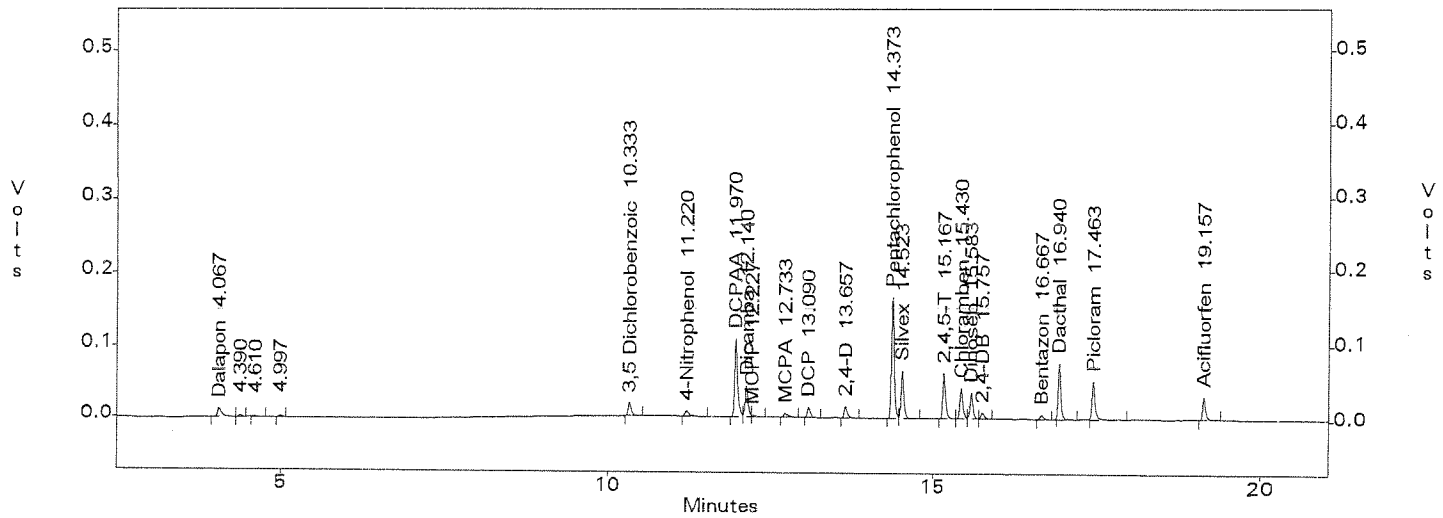
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.017
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17051
Acquired : Feb 22, 2016 12:17:58
Printed : Feb 22, 2016 12:55:33
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.067	58066.0	643.80	90.193	BV
3,5 Dichlorobenzoic	10.333	63655.0	677.65	93.935	BV
4-Nitrophenol	11.220	29981.0	308.97	97.036	BV
DCPAA	11.970	353597.0	382.88	923.530	BV
Dicamba	12.140	129852.0	1344.60	96.573	Vx
MCPP	12.227	10984.0	2.16	5083.724	xx
MCPA	12.733	24303.0	5.07	4789.527	BV
DCP	13.090	47474.0	508.17	93.422	vv
2,4-D	13.657	54319.0	598.69	90.730	VB
Pentachlorophenol	14.373	506728.0	4844.71	104.594	BV
Silvex	14.523	193995.0	1957.30	99.114	VI
2,4,5-T	15.167	192056.0	2001.68	95.948	BV
Chloramben	15.430	131333.0	1388.68	94.574	VV
Dinoseb	15.583	103520.0	1048.62	98.720	VV
2,4-DB	15.757	29352.0	340.05	86.317	VV
Bentazon	16.667	20046.0	217.11	92.331	VV
Dacthal	16.940	225467.0	2312.00	97.520	xV
Picloram	17.463	179913.0	2085.24	86.279	xV
Acifluorfen	19.157	96403.0	1107.39	87.055	vv

c:\ezchrom\chrom\wb19\wb19.017 -- Channel A



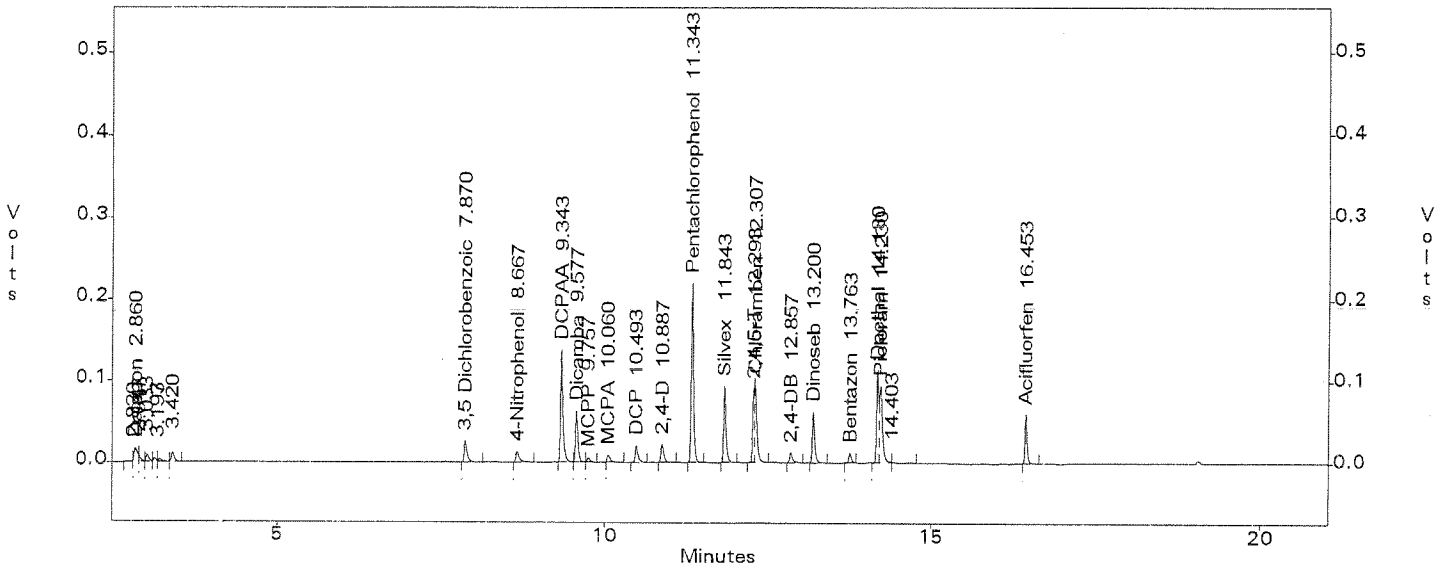
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.017
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17051
Acquired : Feb 22, 2016 12:17:58
Printed : Feb 22, 2016 12:55:33
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	60183.0	618.45	97.313	xx
3,5 Dichlorobenzoic	7.870	75487.0	757.07	99.709	BV
4-Nitrophenol	8.667	44766.0	430.56	103.972	BV
DCPAA	9.343	367859.0	385.54	954.152	BV
Dicamba	9.577	156115.0	1561.07	100.005	VV
MCPP	9.757	13229.0	2.52	5240.282	vv
MCPA	10.060	26468.0	5.09	5202.160	xB
DCP	10.493	58285.0	564.08	103.328	BI
2,4-D	10.887	68822.0	706.46	97.418	BB
Pentachlorophenol	11.343	567488.0	5597.35	101.385	BI
Silvex	11.843	242340.0	2321.63	104.384	vv
2,4,5-T	12.293	158451.0	1649.51	96.059	Bx
Chloramben	12.307	268745.0	2615.99	102.732	xx
2,4-DB	12.857	39378.0	401.89	97.981	vv
Dinoseb	13.200	157258.0	1494.07	105.255	BV
Bentazon	13.763	29288.0	305.54	95.858	vv
Dacthal	14.180	251977.0	2450.60	102.822	Bx
Picloram	14.230	307742.0	3490.13	88.175	xx
Acifluorfen	16.453	138633.0	1644.22	84.315	BB

c:\ezchrom\chrom\wb19\wb19.017 -- Channel B



CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : ZB-35HT
Column size ID : 30MX0.25MM 0.25UM
Mid Conc Init LFID & Datetime: WL17005A 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19022A 02/22/2016 15:14
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	4.063	4.047	4.079	91.0	643.800	55004	85.44	-6		20
3,5-Dichlorobenzo	10.327	10.306	10.348	93.1	677.700	64875	95.74	3		20
4-Nitrophenol	11.210	11.190	11.230	90.8	309.000	30407	98.41	8		20
Dicamba	12.130	12.107	12.153	94.0	1344.6	130652	97.17	3		20
MCPP	12.220	12.197	12.243	4693.0	2.160	10314	4773.63	2		20
MCPA	12.727	12.705	12.749	4673.0	5.070	24742	4876.04	4		20
Dichloroprop	13.080	13.058	13.102	94.3	508.200	46821	92.14	-2		20
2,4-D	13.650	13.623	13.677	94.0	598.700	55337	92.43	-2		20
Pentachlorophenol	14.367	14.340	14.394	95.0	4844.7	503431	103.91	9		20
2,4,5-TP(Silvex)	14.517	14.496	14.538	95.0	1957.3	192665	98.43	4		20
Chloramben	15.420	15.398	15.442	93.6	1388.7	128411	92.47	-1		20
2,4,5-T	15.160	15.138	15.182	94.8	2001.7	197136	98.49	4		20
2,4-DB	15.750	15.729	15.771	94.7	340.000	29695	87.33	-8		20
Dinoseb	15.577	15.556	15.598	94.5	1048.6	110654	105.52	12		20
Bentazon	16.657	16.636	16.678	94.5	217.100	19938	91.83	-3		20
Dacthal	16.933	16.912	16.954	91.5	2312.0	225820	97.67	7		20
Picloram	17.453	17.432	17.474	94.5	2085.2	208201	99.85	6		20
Acifluorfen	19.147	19.126	19.168	96.3	1107.4	134623	121.57	26	*	20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	11.963	11.940	11.986	935.8	382.900	349996	914.13	-2		20

NT

CONTINUE CALIBRATION
METHOD 8151

Lab Name : EMAX Inc
Instrument ID : GC-W GC16
GC Column : STX-CLPESTII
Column size ID : 30MX0.32MM 0.32UM
Mid Conc Init LFID & Datetime: WL17005B 12/17/2015 12:36
Conc Cont LFID & Datetime: WB19022B 02/22/2016 15:14
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Dalapon	2.860	2.844	2.876	91.0	618.400	62007	100.26	10		20
3,5-Dichlorobenzo	7.867	7.846	7.888	93.1	757.100	74466	98.36	6		20
4-Nitrophenol	8.703	8.672	8.734	90.8	430.600	44423	103.18	14		20
Dicamba	9.570	9.546	9.594	94.0	1561.1	154518	98.98	5		20
MCPP	9.750	9.729	9.771	4693.0	2.520	13593	5384.47	20		20
MCPA	10.057	10.033	10.081	4673.0	5.090	26365	5181.92	11		20
Dichloroprop	10.490	10.464	10.516	94.3	564.100	58619	103.92	10		20
2,4-D	10.880	10.858	10.902	94.0	706.500	71285	100.90	7		20
Pentachlorophenol	11.337	11.313	11.361	95.0	5597.4	562752	100.54	6		20
2,4,5-TP(Silvex)	11.837	11.813	11.861	95.0	2321.6	243108	104.71	10		20
Chloramben	12.303	12.277	12.329	93.6	2616.0	273135	104.41	12		20
2,4,5-T	12.287	12.263	12.311	94.8	1649.5	163823	99.32	5		20
2,4-DB	12.850	12.824	12.876	94.7	401.900	40572	100.95	7		20
Dinoseb	13.193	13.169	13.217	94.5	1494.1	163317	109.31	16		20
Bentazon	13.757	13.730	13.784	94.5	305.500	32303	105.73	12		20
Dacthal	14.173	14.146	14.200	91.5	2450.6	245514	100.18	9		20
Picloram	14.220	14.194	14.246	94.5	3490.1	360515	103.30	9		20
Acifluorfen	16.447	16.423	16.471	96.3	1644.2	182541	111.02	20		20

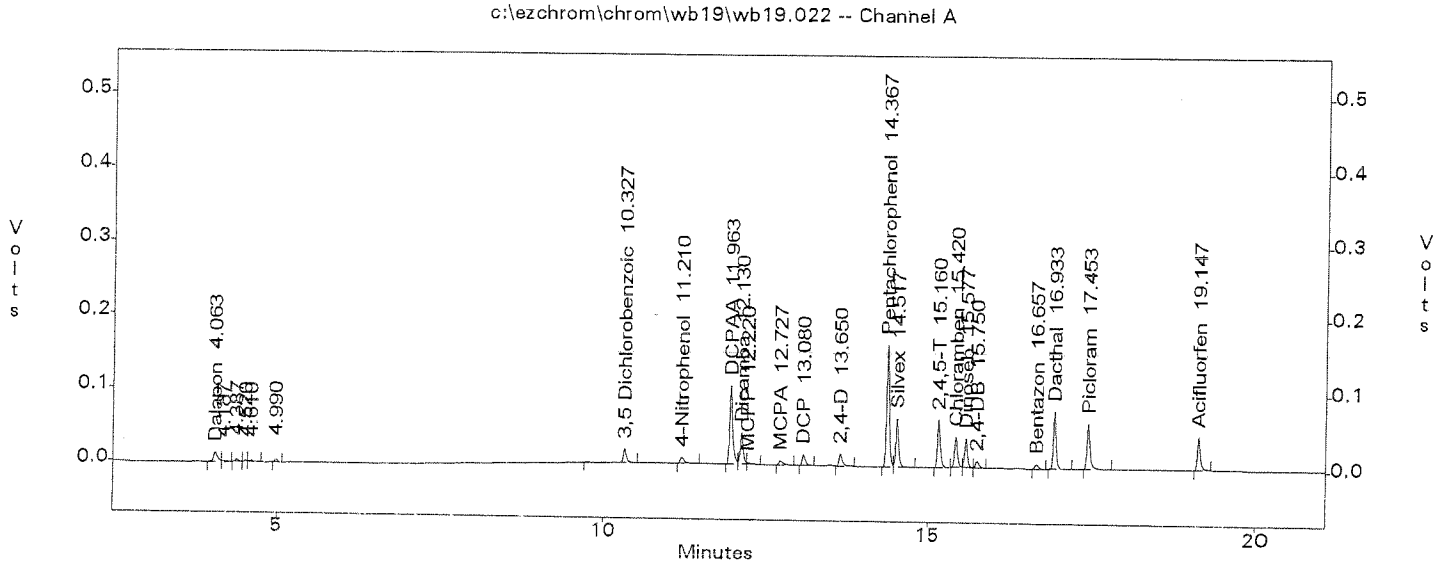
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
2,4-DCPAA	9.337	9.313	9.361	935.8	385.500	366375	950.30	2		20

EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.022
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17052
Acquired : Feb 22, 2016 15:14:05
Printed : Feb 22, 2016 16:20:27
User : RZhou

Channel A Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	4.063	55004.0	643.80	85.437	BV
3,5 Dichlorobenzoic	10.327	64875.0	677.65	95.735	VV
4-Nitrophenol	11.210	30407.0	308.97	98.414	BB
DCPAA	11.963	349996.0	382.88	914.125	BV
Dicamba	12.130	130652.0	1344.60	97.168	Vx
MCPP	12.220	10314.0	2.16	4773.628	xx
MCPA	12.727	24742.0	5.07	4876.043	VV
DCP	13.080	46821.0	508.17	92.137	vv
2,4-D	13.650	55337.0	598.69	92.431	VB
Pentachlorophenol	14.367	503431.0	4844.71	103.914	BV
Silvex	14.517	192665.0	1957.30	98.434	VI
2,4,5-T	15.160	197136.0	2001.68	98.485	BV
Chloramben	15.420	128411.0	1388.68	92.470	VV
Dinoseb	15.577	110654.0	1048.62	105.523	vv
2,4-DB	15.750	29695.0	340.05	87.326	VV
Bentazon	16.657	19938.0	217.11	91.834	BV
Dacthal	16.933	225820.0	2312.00	97.673	VV
Picloram	17.453	208201.0	2085.24	99.845	VB
Acifluorfen	19.147	134623.0	1107.39	121.568	vv



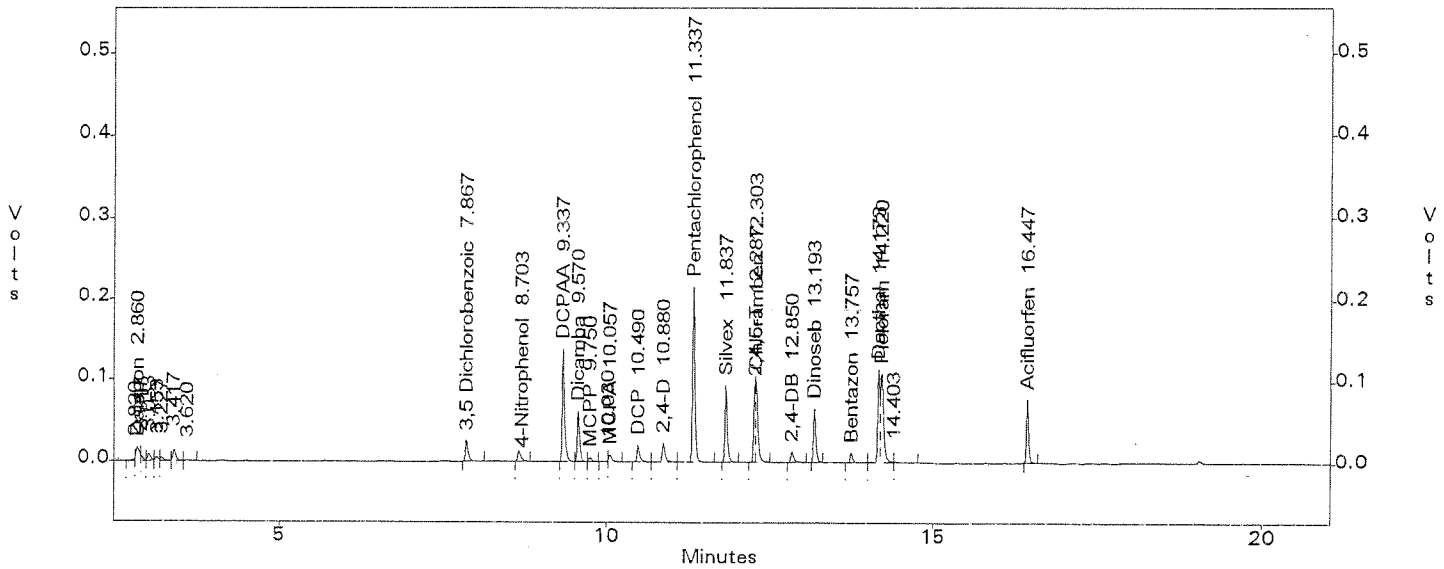
EPA 8151 by GC/ECD
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\wb19\wb19.022
Method : c:\ezchrom\chrom\wb12\he16l17.met
Sample ID : CHE16L17052
Acquired : Feb 22, 2016 15:14:05
Printed : Feb 22, 2016 16:20:28
User : RZhou

Channel B Results

Peak Name	RT(min)	Area	Average RF	ESTD Conc(ppb)	ICODE
Dalapon	2.860	62007.0	618.45	100.262	xx
3,5 Dichlorobenzoic	7.867	74466.0	757.07	98.361	BV
4-Nitrophenol	8.703	44423.0	430.56	103.176	BS
DCPAA	9.337	366375.0	385.54	950.302	BV
Dicamba	9.570	154518.0	1561.07	98.982	VV
MCPP	9.750	13593.0	2.52	5384.470	vv
MCPA	10.057	26365.0	5.09	5181.916	xV
DCP	10.490	58619.0	564.08	103.920	VV
2,4-D	10.880	71285.0	706.46	100.905	VV
Pentachlorophenol	11.337	562752.0	5597.35	100.539	VB
Silvex	11.837	243108.0	2321.63	104.714	vv
2,4,5-T	12.287	163823.0	1649.51	99.316	Bx
Chloramben	12.303	273135.0	2615.99	104.410	xx
2,4-DB	12.850	40572.0	401.89	100.952	vv
Dinoseb	13.193	163317.0	1494.07	109.310	BI
Bentazon	13.757	32303.0	305.54	105.726	vv
Dacthal	14.173	245514.0	2450.60	100.185	Vx
Picloram	14.220	360515.0	3490.13	103.296	xx
Acifluorfen	16.447	182541.0	1644.22	111.020	BI

c:\ezchrom\chrom\wb19\wb19.022 -- Channel B



ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PCB CONGENERS/HERBICIDES/EDB and DBCP

Note: For samples and relevant QC/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	A16-026
Instrument No.:	16
Analytical Sequence:	WL17
Method File:	HE16L17
Anlytical Batch:	WL17012

SOP #	Rev. #
☑ EMAX-8151	4
☐ EMAX-8082CON	1
☐ EMAX-504.1	4
☐ EMAX-	

ICAL REFERENCE

ICAL ID	BATCH	DATE
HE16L17	WL17	12/17/15

STANDARDS ID		Conc (µg/L)
DCC	SS4B-03-79-02	100/5000/1000
ICAL	79-01	10/500/100-200/4000/2
ICV	79-03	100/10,000
		50/5000

Hexane Lot # SH297

Column	☑ A. ZB-35HT B. RTX CLPEST II

ELECTRONIC DATA ARCHIVAL

Location	Date
☑ EZC_4_Pesticides	
☐	

Analyzed By: [illegible] Date: 12/17/15

Disposed By: [illegible] Date Disposed: 12/18/15

This page is checked during data review.

Syringe Lot #: ☑ 430353 ☐ 454251 ☐ 475284 ☐ 354311

Run	Sample ID	Method	Filename	Mult.	Description
1	IB16L17001	he16l17.met	WL17.001	1	
2	HE16L178	he16l17.met	WL17.002	1	
3	HE16L177	he16l17.met	WL17.003	1	
4	HE16L176	he16l17.met	WL17.004	1	
5	HE16L175	he16l17.met	WL17.005	1	
6	HE16L174	he16l17.met	WL17.006	1	
7	HE16L173	he16l17.met	WL17.007	1	
8	HE16L172	he16l17.met	WL17.008	1	
9	HE16L171	he16l17.met	WL17.009	1	
10	IHE16L17001	he16l17.met	WL17.010	1	
11	IHE16L17002	he16l17.met	WL17.011	1	
12	CHE16L17001	he16l17.met	WL17.012	1	
13	HEL005WB	he16l17.met	WL17.013	1	
14	HEL005WL	he16l17.met	WL17.014	1	
15	HEL005WC	he16l17.met	WL17.015	1	
16	L527-01I DF=5	he16l17.met	WL17.016	5	
17	L527-01J DF=2	he16l17.met	WL17.017	2	
18	RINSE	he16l17.met	WL17.018	1	
19	IB16L17002	he16l17.met	WL17.019	1	
20	CHE16L17002	he16l17.met	WL17.020	1	

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PCB CONGENERS/HERBICIDES/EDB and DBCP

Note: For samples and relevant QC/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	A16-027
Instrument No.:	16
Analytical Sequence:	WB19
Method File:	HE1647
Anlytical Batch:	WB19002

SOP #	Rev. #
☑ EMAX-8151	5
☐ EMAX-8082CON	1
☐ EMAX-504.1	4
☐ EMAX-	

ICAL REFERENCE

ICAL ID	BATCH	DATE
HE1647	WL17	12/17/15

STANDARDS ID		Conc (µg/L)
DCC	SS4B-03-80-02	100/5000/1000

Hexane Lot # 55149

Column	☑ A. ZB-35HT B. RTX CLPEST II

ELECTRONIC DATA ARCHIVAL

Location	Date
☑ EZC_4_Pesticides	
☐	

Syringe Lot #: ☑ 430353 ☐ 454251 ☐ 475284 ☐ 354311

Analyzed By: [illegible] Date: 2/19/16

Disposed By: [illegible] Date Disposed: 2/22/16

This page is checked during data review.

Run	Sample ID	Method	Filename	Mult.	Description
1	IB16L17049	he16l17.met	WB19.001	1	
2	CHE16L17049	he16l17.met	WB19.002	1	
3	HEB007WB	he16l17.met	WB19.003	1	dried out
4	HEB007WL	he16l17.met	WB19.004	1	dried out
5	HEB007WC	he16l17.met	WB19.005	1	
6	TXB005SB	he16l17.met	WB19.006	1	
7	B094-02	he16l17.met	WB19.007	1	
8	B113-02	he16l17.met	WB19.008	1	
9	B113-03	he16l17.met	WB19.009	1	
10	B094-03K DF=50	he16l17.met	WB19.010	50	
11	B094-03T DF=100	he16l17.met	WB19.011	100	
12	HEB007WL	he16l17.met	WB19.012	1	
13	RINSE	he16l17.met	WB19.013	1	
14	IB16L17050	he16l17.met	WB19.014	1	
15	CHE16L17050	he16l17.met	WB19.015	1	
16	IB16L17051	he16l17.met	WB19.016	1	
17	CHE16L17051	he16l17.met	WB19.017	1	
18	HEB007WB	he16l17.met	WB19.018	1	
19	B094-03J DF=10	he16l17.met	WB19.019	10	
20	RINSE	he16l17.met	WB19.020	1	
21	IB16L17052	he16l17.met	WB19.021	1	
22	CHE16L17052	he16l17.met	WB19.022	1	
23	HEB001WB	he16l17.met	WB19.023	1	
24	HEB001WL	he16l17.met	WB19.024	1	

Run	Sample ID	Method	Filename	Mult.	Description
22	CHE16L17052	he16l17.met	WB19.022	1	
23	HEB001WB	he16l17.met	WB19.023	1	
24	HEB001WL	he16l17.met	WB19.024	1	
25	HEB001WC	he16l17.met	WB19.025	1	
26	HEB001WX	he16l17.met	WB19.026	1	
27	HEB001WY	he16l17.met	WB19.027	1	
28	IB16L17053	he16l17.met	WB19.028	1	
29	CHE16L17053	he16l17.met	WB19.029	1	

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
HERBICIDES

SOP	Rev. #
☑ EMAX-8151	4
☐ EMAX-	

Note: For samples, relevant QCs/Standards extracted, refer to attached extraction sequence.

Comments:

Emulsion was observed in sample B094-03, my 2/17/16

Book #.: EHE-020

Preparation Batch: HEB007 W

Matrix Water / TCLP Extract

Micropipette ID: PE00-03 (1000 ul)

Micropipette ID: PE97C-03 (100 ul)

Standards	ID	Amount Added (ml)
Surrogate	SS4B-03-10-03	1.0
LCS/MS	SS4A-02-155	0.1

Reagent	Lot # / ID
CH_2Cl_2	–
Hexane	SW1A-005-16-01
Ethyl Ether	SW1A-005-16-05
Acified Na_2SO_4	SP1B-08-55-02
H_2SO_4	3113122
Diazo-methane	SP1B-08-56-03
Silica Sand	–
Silicic Acid	SP1A-07-01-15
Reagent Water	SW1A-005
Residual Chlorine Strip	5190
pH Strip	HC573149

TUNING

Sonicator #	Reading

Concentrator	Water Bath Temperature Setting(°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		

Lab Sample ID	Sonicator #	Concentrator #
HEB007 -WB	N/A	1
-WL	↓	1
-WC		1
B094 -03		2
B113 -02		2
-03		2
TxB005 -SB		1
B094 -02		2

Test Thermometer = SVOC-T1

Prepared By: my Standard Added By: my

Witnessed By: ML Checked By: ML

Extract Received By: RZ Extract Location: SE04 # 04

Disposal Date: Disposed By:

FileID: HEB007W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR HERBICIDES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16HEB007W01	HEB007WB	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W02	HEB007WL	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W03	HEB007WC	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W04	B094-03	500	ml	2/17/16 13:58	5	500	5	1	opaque, light brown
16HEB007W05	B113-02	500	ml	2/17/16 13:58	5	500	5	1	clear, yellow
16HEB007W06	B113-03	500	ml	2/17/16 13:58	5	500	5	1	
16HEB007W07	TXB005SB	10	ml	2/17/16 13:58	5	500	5	50	TCLP Extract
16HEB007W08	B094-02	10	ml	2/17/16 13:58	5	500	5	50	TCLP Extract

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 2/17/16 13:59

☑ Extraction Ended @ 2/17/16 16:26

Prepared By: MYokoo

Checked By: ML

Date 2/17/16

Comments:

SOP EMAX-8151 Rev. 5

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	TCLPSoln	TCLPVol	Exrtract pH	Preservation	Comments
16TXB005S01	TXB005SB	0	g	2/16/16 14:34		2000		HNO_3	
16TXB005S02	A134-01	100	g	2/16/16 14:41	#1	2000	5.06	HNO_3	for Cr only
16TXB005S03	A134-02	100.03	g	2/16/16 14:43	#1	2000	5.05	HNO_3	for Cr, Pb
16TXB005S04	A134-03	100	g	2/16/16 14:46	#1	2000	5.26	HNO_3	for Pb only
16TXB005S05	A206-01	100	g	2/16/16 14:48	#1	2000	5.79	HNO_3	for Pb only
16TXB005S06	B094-02	100.01	g	2/16/16 14:50	#1	2000	5.08	HNO_3	for 8270, 8151, 8081, Metals, & Hg... (UNPRESERVED)
16TXB005S07	B498-01	90	g	2/16/16 14:53	#1	1800	4.84	HNO_3	7 elements + Hg

☑ DateTimeStarted 2/16/2016 17:30 ☑ Thermometer Reset on 2/16/2016 17:30 Balance ID: 10203192. Calibration check was verified prior to use.

☑ DateTimeEnded 2/17/2016 11:30 Note: Sample preserved with HNO_3 is for metals analysis. MS/MSD were spiked prio Prepared By: DFelic

Extract Location: Metals Received By: SP Checked By: ML

Comment: 02/17/16 Date 2/17/16

EMAX LABORATORIES, INC.

FileID: TXB005S

TCLP EXTRACTION LOG

Determination of TLCP Solution							Determination of TCLP Extract Filtration			Determination of % solids for aqueos phase			
LabSampleID	Phase(s)	Aliquot	Sample pH	HCl	pH	TCLPSolnReq'd	(ml)	(g)	Pressure	WtS(g)	WtF(g)	WtDFS(g)	% Solids
TXB005SB							100						
A134-01	1	5.01	8.54	3.5	1.45	#1	100	97.71	Vacuum				
A134-02	1	5	8.08	3.5	1.42	#1	100	98.59	Vacuum				
A134-03	1	5.02	8.17	3.5	1.47	#1	100	98.83	Vacuum				
A206-01	1	5	8.23	3.5	1.53	#1	100	98.56	Vacuum				
B094-02	1	5.01	8.83	3.5	1.46	#1	100	98.40	Vacuum				
B498-01	1	5.02	5.63	3.5	1.53	#1	100	97.36	Vacuum				

Calibration of pH Meter		InstrumentID:	96
BufferID	Value	Reading	DateTime
SW1-01-780	4	4.01	2/16/16 17:18
SW1-01-794	7	7	2/16/16 17:17
SW1A-005-12-24	CalVer 5	5.03	2/16/16 17:19
SW1-01-780	4	4.01	2/17/16 15:58
SW1-01-794	7	7	2/17/16 15:56
SW1A-005-12-24	CalVer 5	5.03	2/17/16 15:59
ID	Reagent	Desc	Expiration Date
SP1A-07-01-08	HCl	1N	04/01/17
SW1A-005-14-09	HNO_3	Conc	04/29/17
SP1B-08-54-04	TCLP Soln	#1	08/09/16
SP1B-08-56-02	TCLP Soln	#1	08/16/16
Rotary Agitator #	Criteria	rpm	DateTime
1	30 ± 2 rpm	30	2/16/16 17:20
	30 ± 2 rpm		
Thermostat Setting:	73 F /23 C	Thermometer ID:	122273404
TCLP Room Temperature	Criteria	Rdg	DateTime
Room Temp (°C) High	23 ± 2 °C	23.4	2/17/16 9:20
Room Temp (°C) Low	23 ± 2 °C	21.9	2/17/16 0:13
Pipette ID	PE00-01		
CONCENTRATOR (WATER BATH)			
Concentrator #	Temp Setting	Thermometer Rdg	Thermometer ID
5	50	50	SVOC-T1
Filter ID/Lot #	103013/062513		
pH strip Lot#	HC554612		

Legend:

WtS = weight of sample

WtF = weight of filter

WtDFS = weight of dried filter + solids

Prepared By: DFelic

Checked By: ML

Date 2/17/16

METALS / MERCURY

METALS

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	02/10/16
Project	: CANNON AFB PBR	Date Received:	02/11/16
SDG NO.	: 16B094	Date Extracted:	02/17/16 11:22
Sample ID:	CAFB-IDW-W-022016	Date Analyzed:	02/23/16 23:47
Lab Samp ID:	B094-03	Dilution Factor:	1
Lab File ID:	F6B10114	Matrix :	WATER
Ext Btch ID:	IMB025W	% Moisture :	NA
Calib. Ref.:	F6B10108	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	4.14	1.00	0.200	0.100
Barium	121	1.00	0.500	0.250
Cadmium	0.434J	1.00	0.200	0.100
Chromium, total	50.9	1.00	0.200	0.100
Lead	9.83	1.00	0.200	0.100
Selenium	10.7	1.00	0.300	0.150
Silver	ND	1.00	0.200	0.100

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/17/16
SDG NO.	: 16B094	Date Extracted:	02/17/16 11:22
Sample ID:	MBLK1W	Date Analyzed:	02/23/16 23:30
Lab Samp ID:	IMB025WB	Dilution Factor:	1
Lab File ID:	F6B10110	Matrix :	WATER
Ext Btch ID:	IMB025W	% Moisture :	NA
Calib. Ref.:	F6B10108	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	ND	1.00	0.200	0.100
Barium	ND	1.00	0.500	0.250
Cadmium	ND	1.00	0.200	0.100
Chromium, total	ND	1.00	0.200	0.100
Lead	ND	1.00	0.200	0.100
Selenium	ND	1.00	0.300	0.150
Silver	ND	1.00	0.200	0.100

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1W			
CONTROL NO.:	IMB025WB	IMB025WL		
LAB FILE ID:	F6B10110	F6B10111		
DATIME EXTRCTD:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	NA
DATIME ANALYZD:	02/23/1623:30	02/23/1623:34	DATE RECEIVED:	02/17/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
Arsenic	ND	30.0	29.5	98	80-120
Barium	ND	30.0	29.7	99	80-120
Cadmium	ND	30.0	29.9	100	80-120
Chromium, total	ND	30.0	29.5	98	80-120
Lead	ND	30.0	34.7	116	80-120
Selenium	ND	30.0	30.0	100	80-120
Silver	ND	30.0	28.3	94	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	CAFB-IDW-W-022016			
CONTROL NO.:	B094-03	B094-03M		
LAB FILE ID:	F6B10114	F6B10112		
DATIME EXTRCTD:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATIME ANALYZD:	02/23/1623:47	02/23/1623:38	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	QC LIMIT (%)
Arsenic	4.14	30.0	37.7	112	80-120
Barium	121	30.0	167	151*	80-120
Cadmium	0.434J	30.0	30.1	99	80-120
Chromium, total	50.9	30.0	84.0	110	80-120
Lead	9.83	30.0	42.5	109	80-120
Selenium	10.7	30.0	46.2	118	80-120
Silver	ND	30.0	26.6	89	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	CAFB-IDW-W-022	CAFB-IDW-W-022		
EMAX SAMP ID:	B094-03	B094-03J		
LAB FILE ID:	F6B10114	F6B10115		
DATE EXTRACTED:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATE ANALYZED:	02/23/1623:47	02/23/1623:51	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Arsenic	4.14	4.04J	NA	10
Barium	121	119	2	10
Cadmium	.434J	.558J	NA	10
Chromium, total	50.9	52.2	3	10
Lead	9.83	10.5	7	10
Selenium	10.7	9.61	10	10
Silver	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	CAFB-IDW-W-022016			
CONTROL NO.:	B094-03	B094-03A		
LAB FILE ID:	F6B10114	F6B10113		
DATIME EXTRCTD:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATIME ANALYZD:	02/23/1623:47	02/23/1623:42	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B1010B		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Arsenic	4.14	30.0	38.5	115	75-125
Barium	121	30.0	149	93	75-125
Cadmium	0.434J	30.0	30.7	101	75-125
Chromium, total	50.9	30.0	79.7	96	75-125
Lead	9.83	30.0	43.4	112	75-125
Selenium	10.7	30.0	47.0	121	75-125
Silver	ND	30.0	25.1	84	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW6020A

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	CAFB-IDW-W-022	CAFB-IDW-W-022		
EMAX SAMP ID:	B094-03	B094-03D		
LAB FILE ID:	F6B10114	F6B10116		
DATE EXTRACTED:	02/17/1611:22	02/17/1611:22	DATE COLLECTED:	02/10/16
DATE ANALYZED:	02/23/1623:47	02/23/1623:55	DATE RECEIVED:	02/11/16
PREP. BATCH:	IMB025W	IMB025W		
CALIB. REF:	F6B10108	F6B10108		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	DUPL RSLT (ug/L)	RPD RSLT %	QC LIMIT (%)
Arsenic	4.14	4.26	3	20
Barium	121	138	13	20
Cadmium	.434J	.45J	NA	20
Chromium, total	50.9	54.2	6	20
Lead	9.83	11.1	12	20
Selenium	10.7	10.7	0	20
Silver	ND	ND	0	20

ICP-MS QC CHECK TABLE

QC	CCV HIGH	ICV	CCV	ICSAB	ICSA
Limit%	95-105	90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	500	300	250	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	50	30	25	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/23/16 15:21

End Date: 2/24/16 00:12

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

- CCB4 Ni >LOD
- MRL B2305, 02 Ni failed

Book #:	AF6-015
Instrument No.:	F6
Analytical Batch:	F6B10
Analytical Sequence:	F6B10
Method File:	24X6020H
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☐ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☑ EMAX-200.8	5
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B059.57-03	MRL1 (1)	SM6B059.58-07
S1	.62-02	MRL2 (0.5)	.59-01
S2	.55-04	MRL3 (CM)	.59-02
S3	.55-05	MRL4	NA
S4	.57-07	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B059.58-03
S7		Post-Spike 1	SM6A.007-02-29
ICV	SM6B059.60-01	Post-Spike 2	02-30
CCV	.55-06	Post-Spike 3	NA
ICSA	.58-05	Post-Spike 4	
ICSAB	.58-06		
6020 TUNE SOLN.	.59-02		
200.8 TUNE SOLN.	.59-03		

Analyzed By: CM

Date: 2/23/16

SEQUENCE FILE : IF6B10

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
F6B10003	BLNK	15:21	02/23/16	1.00
F6B10004	S0	15:25	02/23/16	1.00
F6B10005	S1 0.5	15:29	02/23/16	1.00
F6B10006	S2 50	15:34	02/23/16	1.00
F6B10007	S3 250	15:38	02/23/16	1.00
F6B10008	S4 500	15:42	02/23/16	1.00
F6B10009	ICV	15:46	02/23/16	1.00
F6B10010	ICB	15:50	02/23/16	1.00
F6B10011	MRLB2301	15:54	02/23/16	1.00
F6B10012	MRLB2302	15:58	02/23/16	1.00
F6B10013	ICSA	16:03	02/23/16	1.00
F6B10014	ICSAB	16:07	02/23/16	1.00
F6B10015	MRLB2303	16:12	02/23/16	1.00
F6B10016	CCV1	16:16	02/23/16	1.00
F6B10017	CCB1	16:20	02/23/16	1.00
F6B10018	IMB022SB	16:24	02/23/16	1.00
F6B10019	IMB022SL	16:28	02/23/16	1.00
F6B10020	B068-01M	16:33	02/23/16	1.00
F6B10021	B068-01A	16:37	02/23/16	1.00
F6B10022	B068-01	16:41	02/23/16	1.00
F6B10023	B068-01J	16:45	02/23/16	5.00
F6B10024	B068-01D	16:49	02/23/16	1.00
F6B10025	B068-02	16:54	02/23/16	1.00
F6B10026	B068-03	16:58	02/23/16	1.00
F6B10027	BLANK	17:04	02/23/16	1.00
F6B10028	CCV2	17:09	02/23/16	1.00
F6B10029	CCB2	17:13	02/23/16	1.00
F6B10030	B068-04	17:17	02/23/16	1.00
F6B10031	B068-05	17:21	02/23/16	1.00
F6B10032	B068-06	17:26	02/23/16	1.00
F6B10033	B068-07	17:30	02/23/16	1.00
F6B10034	B068-08	17:34	02/23/16	1.00
F6B10035	B068-09	17:38	02/23/16	1.00
F6B10036	B068-10	17:43	02/23/16	1.00
F6B10037	B094-04	17:47	02/23/16	1.00
F6B10038	B094-05	17:51	02/23/16	1.00
F6B10039	BLANK	17:55	02/23/16	1.00
F6B10040	CCV3	18:00	02/23/16	1.00
F6B10041	CCB3	18:04	02/23/16	1.00
F6B10042	IMB024SB	18:08	02/23/16	1.00
F6B10043	IMB024SL	18:12	02/23/16	1.00
F6B10044	B082-01M	18:16	02/23/16	1.00
F6B10045	B082-01A	18:21	02/23/16	1.00
F6B10046	B082-01	18:25	02/23/16	1.00
F6B10047	B082-01J	18:29	02/23/16	5.00
F6B10048	B082-01D	18:33	02/23/16	1.00
F6B10049	B082-02	18:38	02/23/16	1.00
F6B10050	B082-03	18:42	02/23/16	1.00
F6B10051	BLANK	18:46	02/23/16	1.00
F6B10052	CCV4	18:50	02/23/16	1.00
F6B10053	CCB4	19:28	02/23/16	1.00

F6B10054	B082-04	19:32	02/23/16	1.00
F6B10055	B082-05	19:36	02/23/16	1.00
F6B10056	B082-06	19:41	02/23/16	1.00
F6B10057	B082-07	19:45	02/23/16	1.00
F6B10058	B082-08	19:49	02/23/16	1.00
F6B10059	B082-09	19:53	02/23/16	1.00
F6B10060	B082-10	19:58	02/23/16	1.00
F6B10061	B082-11	20:02	02/23/16	1.00
F6B10062	B082-12	20:06	02/23/16	1.00
F6B10063	BLANK	20:10	02/23/16	1.00
F6B10064	CCV5	20:15	02/23/16	1.00
F6B10065	CCB5	20:18	02/23/16	1.00
F6B10066	IMB018WB	20:23	02/23/16	1.00
F6B10067	IMB018WL	20:27	02/23/16	1.00
F6B10068	IMB018WC	20:31	02/23/16	1.00
F6B10069	B082-13	20:36	02/23/16	1.00
F6B10070	B082-14	20:40	02/23/16	1.00
F6B10071	B047-01	20:44	02/23/16	1.00
F6B10072	B047-02	20:48	02/23/16	1.00
F6B10073	B047-03	20:53	02/23/16	1.00
F6B10074	B047-04	20:57	02/23/16	1.00
F6B10075	BLANK	21:01	02/23/16	1.00
F6B10076	CCV6	21:06	02/23/16	1.00
F6B10077	CCB6	21:09	02/23/16	1.00
F6B10078	B047-05M	21:14	02/23/16	1.00
F6B10079	B047-05S	21:18	02/23/16	1.00
F6B10080	B047-05A	21:22	02/23/16	1.00
F6B10081	B047-05	21:26	02/23/16	1.00
F6B10082	B047-05J	21:31	02/23/16	5.00
F6B10083	B047-06	21:35	02/23/16	1.00
F6B10084	B047-07	21:39	02/23/16	1.00
F6B10085	B054-02	21:44	02/23/16	1.00
F6B10086	BLANK	21:48	02/23/16	1.00
F6B10087	MRLB2304	21:52	02/23/16	1.00
F6B10088	CCV7	21:57	02/23/16	1.00
F6B10089	CCB7	22:00	02/23/16	1.00
F6B10090	IMB020WB	22:05	02/23/16	1.00
F6B10091	IMB020WL	22:09	02/23/16	1.00
F6B10092	IMB020WC	22:13	02/23/16	1.00
F6B10093	B063-02	22:18	02/23/16	1.00
F6B10094	B063-03M	22:22	02/23/16	1.00
F6B10095	B063-03S	22:26	02/23/16	1.00
F6B10096	B063-03A	22:30	02/23/16	1.00
F6B10097	B063-03	22:34	02/23/16	1.00
F6B10098	B063-03J	22:39	02/23/16	5.00
F6B10099	BLANK	22:43	02/23/16	1.00
F6B10100	CCV8	22:47	02/23/16	1.00
F6B10101	CCB8	22:51	02/23/16	1.00
F6B10102	B074-02	22:56	02/23/16	1.00
F6B10103	B075-02	23:00	02/23/16	1.00
F6B10104	B075-03	23:04	02/23/16	1.00
F6B10105	B075-04	23:08	02/23/16	1.00
F6B10106	BLANK	23:13	02/23/16	1.00
F6B10107	MRLB2305	23:17	02/23/16	1.00

F6B10108	CCV9	23:21	02/23/16	1.00
F6B10109	CCB9	23:25	02/23/16	1.00
F6B10110	IMB025WB	23:30	02/23/16	1.00
F6B10111	IMB025WL	23:34	02/23/16	1.00
F6B10112	B094-03M	23:38	02/23/16	1.00
F6B10113	B094-03A	23:42	02/23/16	1.00
F6B10114	B094-03	23:47	02/23/16	1.00
F6B10115	B094-03J	23:51	02/23/16	5.00
F6B10116	B094-03D	23:55	02/23/16	1.00
F6B10117	BLANK	23:59	02/23/16	1.00
F6B10118	MRLB2306	00:04	02/24/16	1.00
F6B10119	CCV10	00:08	02/24/16	1.00
F6B10120	CCB10	00:12	02/24/16	1.00

SDG : _____ UNIT : % ICPMS CHECK : IF6B10 DATE : 02/23/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	100	107	102	100	95	94	102	97	100	104	98	98	96	100	103	93	100	94	96	97	98	93	89*	97	98	96	96	92	99	90	92	103	99
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2301	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2302	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	----	----	----	99	89	89	----	97	98	102	104	----	----	----	101	----	----	----	----	----	----	----	----	99	----	----	----	----	----	----	----	----	----
ICSAB	99	103	97	97	89	88	106	97	98	100	105	101	102	107	101	102	99	98	104	102	106	98	38*	100	89	99	98	101	99	98	96	107	100
MRLB2303	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	101	109	110	97	92	92	96	94	99	101	100	99	98	104	105	102	101	101	98	100	100	97	84*	100	99	97	99	98	99	100	92	107	100
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB022SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB022SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	100	104	99	99	93	93	100	96	101	102	100	100	97	102	104	94	101	97	100	100	100	96	102	100	99	98	98	98	98	100	98	103	98
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	102	105	102	101	95	95	101	99	101	102	101	98	97	104	103	96	99	95	103	100	100	96	106	102	101	101	99	100	100	101	99	103	97
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB024SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB024SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
8082-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	98	101	99	102	98	97	104	101	103	103	100	98	96	101	102	93	99	94	100	101	99	95	98	101	100	101	98	97	99	100	99	103	98
CCB4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

B082-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	99	96	95	103	98	98	104	101	103	103	100	98	97	101	102	92	100	95	100	100	99	96	108	103	101	102	100	100	102	99	97	101	96
CCB5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB018WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB018WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB018WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	98	96	97	102	101	101	102	103	101	102	100	97	95	101	102	92	98	94	100	100	99	95	87*	100	98	101	98	98	99	99	98	103	99
CCB6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B054-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2304	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	100	101	129*	101	99	97	102	102	103	102	100	98	97	102	102	94	99	93	101	101	101	94	83*	102	101	101	100	101	101	100	98	103	97
CCB7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB020WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB020WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB020WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	99	99	109	103	98	97	103	101	101	103	99	98	97	101	102	91	99	95	100	100	100	96	83*	101	99	101	100	100	101	100	98	103	99
CCB8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B074-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B075-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B075-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B075-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2305	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV9	99	100	157*	102	98	97	103	102	102	102	99	98	96	101	101	91	99	94	102	101	100	95	81*	101	101	101	99	101	101	100	98	103	96
CCB9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB025WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB025WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2306	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV10	101	101	113*	102	97	96	100	99	101	102	99	98	97	101	102	90	98	94	100	99	100	97	83*	99	98	101	100	100	100	100	98	104	99
CCB10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

SDG : 160094 UNIT : UG/L SUMMARY of CALIBRATION BLANKS : IF6B10 (WATER) DATE : 02/23/16 INST : EMAXTIF6

ANALYTE	Li	Be	B	Na	Mg	Al	Si	P	K	Ca	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Sr	Zr	Mo	Ag	Cd	Sn	Sb	Ba	W	Tl	Pb	U
BLNK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S1 0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S2 50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S3 250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S4 500	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	-.073	.010	.085	-17.0	.796	1.01	.853	-4.61	-3.63	2.91	.007	-.043	-.000	.071	8.01	.012	.032	.036	.036	.040	.080	.007	-.015	.263	.000	.013	.157	.314	.020	.036	.023	.013	.039
MRLB2301	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2302	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA	.397	.017	.374	----	----	----	5.62	----	----	----	----	.010	1.26	.316	----	.270	.188	.677	4.00	.205	.043	.626	.707	----	.019	.195	.109	.077	.090	.123	.003	.231	.003
ICSAB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2303	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	.024	.008	-.074	-20.4	.939	.813	.864	-8.67	-7.13	2.56	.042	-.068	-.010	.046	7.79	.003	.137	.034	-.014	.019	.063	.005	-.013	.2B7	.000	.010	.093	.047	.015	.016	.029	.010	.029
IMB022SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB022SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B06B-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B06B-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	.077	.009	-.119	-23.7	1.29	1.28	1.07	-6.74	-3.93	3.38	.027	-.013	-.003	.076	8.13	.010	.171	.028	.020	.037	.074	.005	-.004	.188	.002	.016	.093	.035	.023	.018	.035	.013	.032
B068-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B06B-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B068-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	-.022	.006	.498	-25.2	1.11	1.19	2.47	-3.21	2.06	3.96	.029	.021	-.012	.073	8.07	.009	.197	.021	.016	.039	.074	.008	-.005	.200	-.000	.009	.087	.031	.017	.019	.034	.013	.029
IMB024SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB024SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B0B2-01J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-01D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B0B2-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB4	-.144	.004	.081	-35.1	.762	.312	1.63	-2.70	-3.05	-2.84	.006	-.010	-.033	.035	.745	-.006	.284	-.009	-.009	-.019	-.005	-.005	.039	-.000	.000	.000	-.000	-.036	-.001	-.007	-.003	-.005	.000

B082-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB5	-.079	.005	.553	-30.7	1.38	1.30	2.78	-.317	2.32	1.24	.020	.092	-.012	.138	7.86	.012	.178	.013	-.012	.038	.065	.003	-.003	.178	.000	.009	.095	.034	.024	.016	.029	.011	.029
IMB018WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB018WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB018WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B082-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB6	-.086	.009	.662	-28.2	1.78	1.51	2.96	-.231	3.23	1.53	.033	.128	-.003	.139	8.15	.015	.165	.015	-.035	.048	.075	.002	-.010	.174	-.000	.014	.088	.046	.034	.016	.031	.008	.029
B047-05M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-05J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B047-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B054-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2304	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB7	-.008	.010	5.54	-23.4	1.61	1.45	1.66	-2.01	6.16	1.25	.040	.054	.000	.140	7.70	.016	.179	.023	-.003	.053	.057	.003	-.010	.173	.000	.013	.096	.046	.028	.015	.035	.009	.030
IMB020WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB020WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB020WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B063-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
8063-03J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB8	-.031	.009	2.23	-20.2	1.75	1.35	2.01	-1.67	3.65	1.96	.025	.066	-.012	.141	8.22	.014	.240	.021	-.028	.050	.090	.007	-.015	.160	-.000	.012	.095	.048	.027	.014	.038	.009	.030
B074-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B075-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B075-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B075-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2305	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CCV9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB9	-.080	.008	10.4	-9.30	1.67	1.33	1.80	-1.51	7.28	1.84	.026	.058	-.006	.135	8.10	.017	.331	.030	-.020	.052	.062	.009	-.013	.171	.000	.005	.096	.039	.034	.018	.040	.007	.033
IMB025WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IMB025WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-03D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2306	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB10	.009	.013	3.51	.937	2.39	2.10	3.28	-.665	7.75	18.9	.022	.097	.026	.191	26.4	.023	.328	.060	-.015	.103	.280	.018	.015	.206	.001	.015	.122	.062	.039	.024	.054	.016	.040

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6B10001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6B10002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1101	F6B10003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalBlk	1202	F6B10004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1104	F6B10005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1105	F6B10006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1106	F6B10007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EMX6020H.M	CalStd	1107	F6B10008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICV1	1204	F6B10009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICB	1202	F6B10010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B10011	MRLB2301	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1306	F6B10012	MRLB2302	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-A	1303	F6B10013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EMX6020H.M	ICS-AB	1304	F6B10014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1207	F6B10015	MRLB2303	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2101	F6B10018	IMB022SB		1.000				
24	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2102	F6B10019	IMB022SL		1.000				
25	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2103	F6B10020	B068-01M		1.000				
26	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2104	F6B10021	B068-01A		1.000				
27	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2105	F6B10022	B068-01		1.000				
28	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2106	F6B10023	B068-01J		5.000				
29	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2107	F6B10024	B068-01D		1.000				
30	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2108	F6B10025	B068-02		1.000				
31	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2109	F6B10026	B068-03		1.000				
32	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10027	BLANK		1.000				
33	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10028	CCV2		1.000				
34	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10029	CCB2		1.000				
35	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2110	F6B10030	B068-04		1.000				
36	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2111	F6B10031	B068-05		1.000				
37	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2112	F6B10032	B068-06		1.000				
38	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2201	F6B10033	B068-07		1.000				
39	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2202	F6B10034	B068-08		1.000				
40	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2203	F6B10035	B068-09		1.000				
41	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2204	F6B10036	B068-10		1.000				

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	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
42	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2205	F6B10037	B094-04		1.000				
43	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2206	F6B10038	B094-05		1.000				
44	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10039	BLANK		1.000				
45	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10040	CCV3		1.000				
46	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10041	CCB3		1.000				
47	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBS	2207	F6B10042	IMB024SB		1.000				
48	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCSS	2208	F6B10043	IMB024SL		1.000				
49	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2209	F6B10044	B082-01M		1.000				
50	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2210	F6B10045	B082-01A		1.000				
51	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2211	F6B10046	B082-01		1.000				
52	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2212	F6B10047	B082-01J		5.000				
53	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2301	F6B10048	B082-01D		1.000				
54	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2302	F6B10049	B082-02		1.000				
55	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2303	F6B10050	B082-03		1.000				
56	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10051	BLANK		1.000				
57	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10052	CCV4		1.000				
58	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10053	CCB4	Ni = 0.28 ppb	1.000				
59	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2304	F6B10054	B082-04		1.000				
60	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2305	F6B10055	B082-05		1.000				
61	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2306	F6B10056	B082-06		1.000				
62	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2307	F6B10057	B082-07		1.000				
63	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2308	F6B10058	B082-08		1.000				
64	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2309	F6B10059	B082-09		1.000				
65	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2310	F6B10060	B082-10		1.000				
66	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2311	F6B10061	B082-11		1.000				
67	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2312	F6B10062	B082-12		1.000				
68	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10063	BLANK		1.000				
69	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10064	CCV5		1.000				
70	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10065	CCB5		1.000				
71	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBW	2410	F6B10066	IMB018WB		1.000				
72	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2411	F6B10067	IMB018WL		1.000				
73	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2412	F6B10068	IMB018WC		1.000				
74	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2401	F6B10069	B082-13		1.000				
75	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2402	F6B10070	B082-14		1.000				
76	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2501	F6B10071	B047-01		1.000				
77	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2502	F6B10072	B047-02		1.000				
78	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2503	F6B10073	B047-03		1.000				
79	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2504	F6B10074	B047-04		1.000				
80	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10075	BLANK		1.000				
81	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10076	CCV6		1.000				
82	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10077	CCB6		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
83	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2505	F6B10078	B047-05M		1.000				
84	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2506	F6B10079	B047-05S		1.000				
85	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2507	F6B10080	B047-05A	Fe, Pb fails	1.000				
86	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2508	F6B10081	B047-05		1.000				
87	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2509	F6B10082	B047-05J		5.000				
88	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2510	F6B10083	B047-06		1.000				
89	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2511	F6B10084	B047-07		1.000				
90	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2512	F6B10085	B054-02		1.000				
91	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10086	BLANK		1.000				
92	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B10087	MRLB2304	1/100/10 ppb	1.000				
93	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10088	CCV7		1.000				
94	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10089	CCB7		1.000				
95	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBW	3101	F6B10090	IMB020WB		1.000				
96	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	3102	F6B10091	IMB020WL		1.000				
97	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	3103	F6B10092	IMB020WC		1.000				
98	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3104	F6B10093	B063-02		1.000				
99	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3105	F6B10094	B063-03M		1.000				
100	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3106	F6B10095	B063-03S		1.000				
101	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3107	F6B10096	B063-03A		1.000				
102	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3108	F6B10097	B063-03		1.000				
103	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3109	F6B10098	B063-03J		5.000				
104	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10099	BLANK		1.000				
105	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10100	CCV8		1.000				
106	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10101	CCB8		1.000				
107	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3110	F6B10102	B074-02		1.000				
108	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3111	F6B10103	B075-02		1.000				
109	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3112	F6B10104	B075-03		1.000				
110	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	3201	F6B10105	B075-04		1.000				
111	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10106	BLANK		1.000				
112	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B10107	MRLB2305	1/100/10 ppb Ni fails	1.000				
113	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10108	CCV9		1.000				
114	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10109	CCB9		1.000				
115	C:\ICPCHEM\1\METHODS\EMX6020H.M	MBW	2403	F6B10110	IMB025WB		1.000				
116	C:\ICPCHEM\1\METHODS\EMX6020H.M	LCS	2404	F6B10111	IMB025WL		1.000				
117	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2405	F6B10112	B094-03M		1.000				
118	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2406	F6B10113	B094-03A		1.000				
119	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2407	F6B10114	B094-03		1.000				
120	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2408	F6B10115	B094-03J		5.000				
121	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	2409	F6B10116	B094-03D		1.000				
122	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1101	F6B10117	BLANK		1.000				
123	C:\ICPCHEM\1\METHODS\EMX6020H.M	Sample	1305	F6B10118	MRLB2306	1/100/10 ppb Ni fails	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
124	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCV	1206	F6B10119	CCV10		1.000				
125	C:\ICPCHEM\1\METHODS\EMX6020H.M	CCB	1202	F6B10120	CCB10		1.000				
126		Keyword		StandBy							
127		Keyword		SMPLEND	End of SMPL						
128		Keyword		End	End of Sequence						
129		Keyword		CCVBEG	Start of CCV						
130		Keyword		CCVEND	End of CCV						
131		Keyword		BLKBEG	Start of BLANK						
132		Keyword		BLKEND	End of BLANK						
133		Keyword		ERRBEG	Start of ERRTERM						
134		Keyword		ERREND	End of ERRTERM						

Last Calib: Feb 23, 2016 03:44 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62016\b\if6b10.b\f6b10004.d\f6b10004.d#	S0	Feb 23 2016 03:25 pm
2	c:\data\if62016\b\if6b10.b\f6b10005.d\f6b10005.d#	S1 0.5	Feb 23 2016 03:29 pm
3	c:\data\if62016\b\if6b10.b\f6b10006.d\f6b10006.d#	S2 50	Feb 23 2016 03:34 pm
4	c:\data\if62016\b\if6b10.b\f6b10007.d\f6b10007.d#	S3 250	Feb 23 2016 03:38 pm
5	c:\data\if62016\b\if6b10.b\f6b10008.d\f6b10008.d#	S4 500	Feb 23 2016 03:42 pm
6	---		
7	---		
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18	---		
19	---		
20	---		

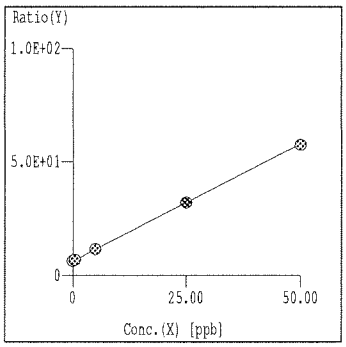
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

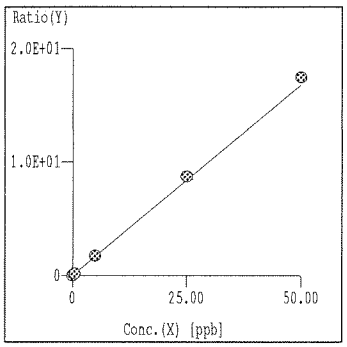
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 7 Li 6 ppb



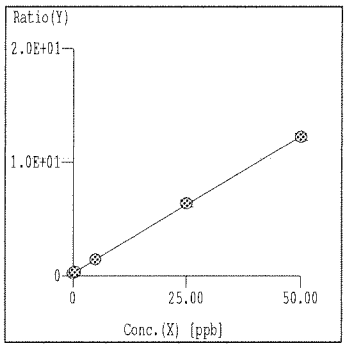
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.033E+000*X +6.308E+000
X = 9.679E-001*Y -6.106E+000
DL = 2.378E-01 ppb
BEC = 6.106 ppb

Step Mass Element ISTD Unit
(3) 9 Be 6 ppb



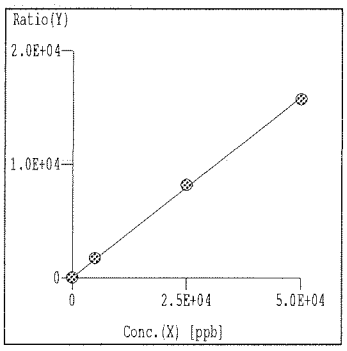
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.362E-001*X +1.769E-003
X = 2.975E+000*Y -5.263E-003
DL = 1.100E-02 ppb
BEC = 5.263E-03 ppb

Step Mass Element ISTD Unit
(3) 11 B 6 ppb



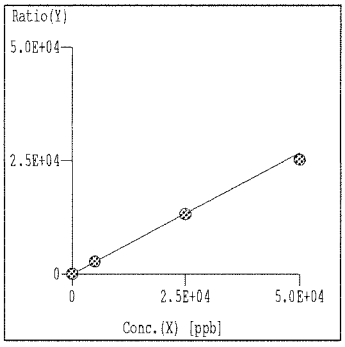
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.416E-001*X +2.128E-001
X = 4.139E+000*Y -8.810E-001
DL = 8.700E-02 ppb
BEC = 8.810E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



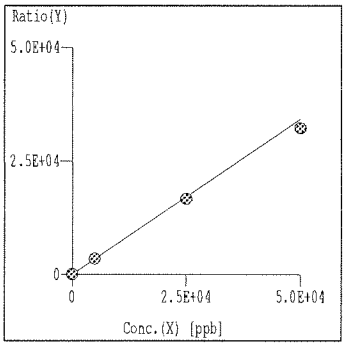
Curve Fit: Y=aX+b
r = 0.9998
Y = 3.184E-001*X +1.836E+001
X = 3.141E+000*Y -5.766E+001
DL = 7.836E-01 ppb
BEC = 57.66 ppb

Step Mass Element ISTD Unit
(3) 24 Mg 45 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 5.349E-001*X +6.521E-001
X = 1.869E+000*Y -1.219E+000
DL = 9.127E-02 ppb
BEC = 1.219 ppb

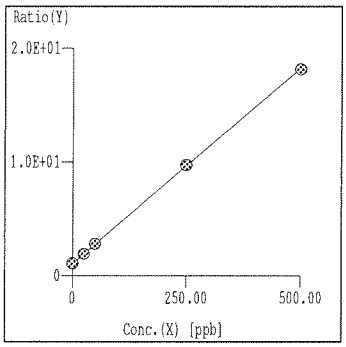
Step Mass Element ISTD Unit
(3) 27 Al 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.857E-001*X +3.543E-001
X = 1.458E+000*Y -5.167E-001
DL = 5.097E-02 ppb
BEC = 5.167E-01 ppb

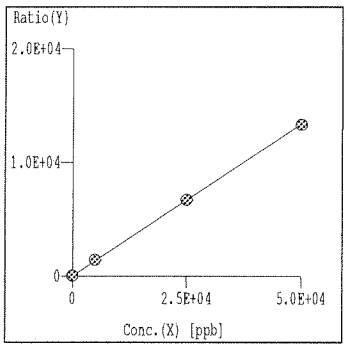
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 31 P	45	ppb



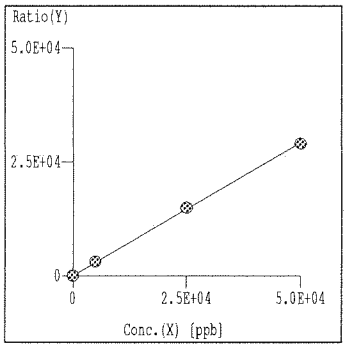
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.443E-002*X +1.058E+000
X = 2.904E+001*Y -3.074E+001
DL = 1.085 ppb
BEC = 30.74 ppb

Step Mass Element	ISTD	Unit
(2) 39 K	45	ppb



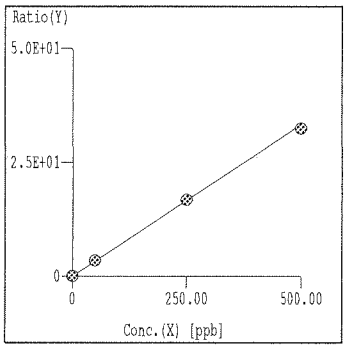
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.679E-001*X +2.120E+001
X = 3.732E+000*Y -7.913E+001
DL = 2.505 ppb
BEC = 79.13 ppb

Step Mass Element	ISTD	Unit
(1) 40 Ca	45	ppb



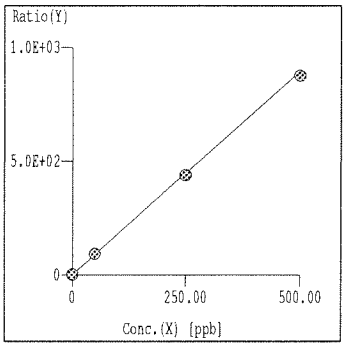
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.865E-001*X +4.883E+000
X = 1.705E+000*Y -8.326E+000
DL = 2.298E-01 ppb
BEC = 8.326 ppb

Step Mass Element	ISTD	Unit
(3) 47 Ti	45	ppb



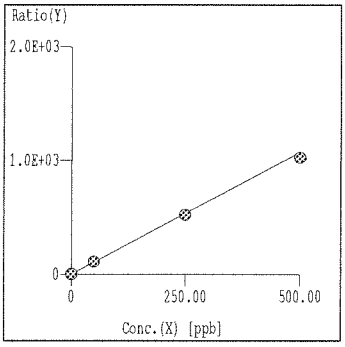
Curve Fit: Y=aX+b
r = 0.9998
Y = 6.675E-002*X +2.754E-003
X = 1.498E+001*Y -4.126E-002
DL = 2.119E-02 ppb
BEC = 4.126E-02 ppb

Step Mass Element	ISTD	Unit
(2) 51 V	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.790E+000*X +9.983E-001
X = 5.588E-001*Y -5.578E-001
DL = 5.575E-02 ppb
BEC = 5.578E-01 ppb

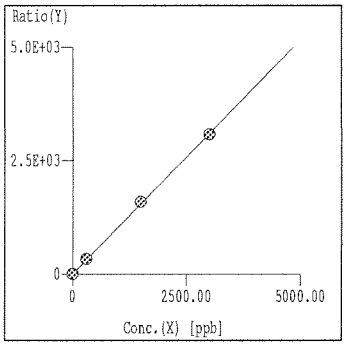
Step Mass Element	ISTD	Unit
(2) 52 Cr	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 2.145E+000*X +2.573E-001
X = 4.663E-001*Y -1.200E-001
DL = 1.204E-02 ppb
BEC = 1.200E-01 ppb

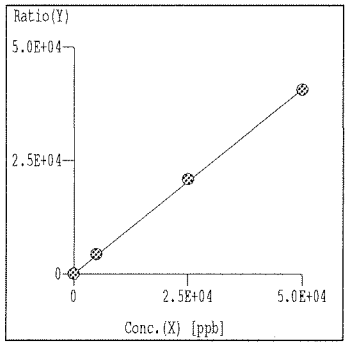
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 55 Mn	45	ppb



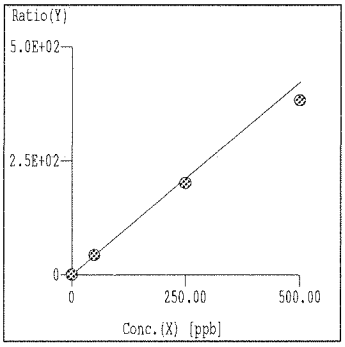
Curve Fit: Y=aX+b
r = 0.9998
Y = 1.033E+000*X +1.379E-001
X = 9.681E-001*Y -1.335E-001
DL = 8.066E-03 ppb
BEC = 1.335E-01 ppb

Step Mass Element	ISTD	Unit
(1) 56 Fe	45	ppb



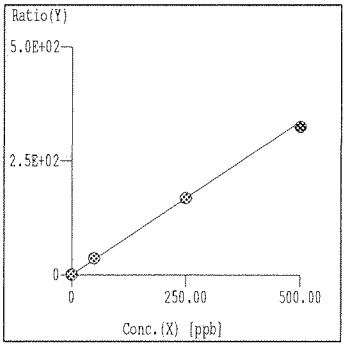
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.147E-001*X +1.613E+000
X = 1.227E+000*Y -1.980E+000
DL = 1.796E-01 ppb
BEC = 1.980 ppb

Step Mass Element	ISTD	Unit
(3) 59 Co	45	ppb



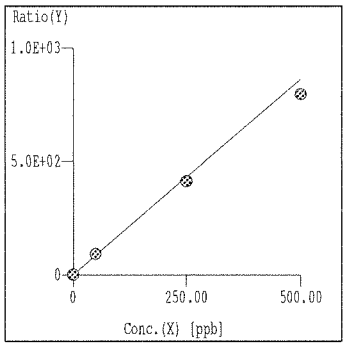
Curve Fit: Y=aX+b
r = 0.9997
Y = 8.446E-001*X +1.820E-002
X = 1.184E+000*Y -2.155E-002
DL = 5.491E-03 ppb
BEC = 2.155E-02 ppb

Step Mass Element	ISTD	Unit
(2) 60 Ni	45	ppb



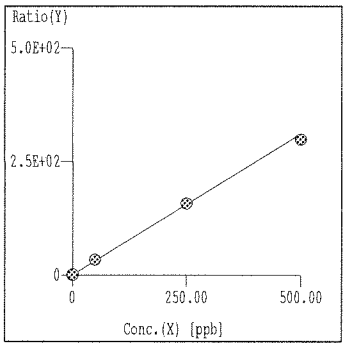
Curve Fit: Y=aX+b
r = 0.9998
Y = 6.731E-001*X +1.077E-001
X = 1.486E+000*Y -1.600E-001
DL = 2.341E-02 ppb
BEC = 1.600E-01 ppb

Step Mass Element	ISTD	Unit
(2) 63 Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.726E+000*X +8.602E-002
X = 5.794E-001*Y -4.984E-002
DL = 1.963E-03 ppb
BEC = 4.984E-02 ppb

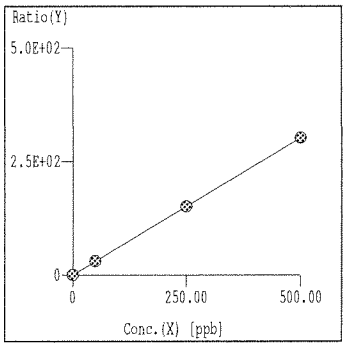
Step Mass Element	ISTD	Unit
(3) 66 Zn	72	ppb



Curve Fit: Y=aX+b
r = 0.9996
Y = 6.214E-001*X +2.083E-001
X = 1.609E+000*Y -3.352E-001
DL = 9.420E-02 ppb
BEC = 3.352E-01 ppb

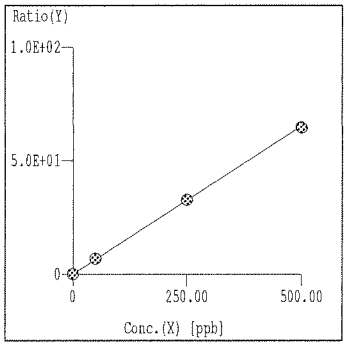
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(2)	75	As	72	ppb



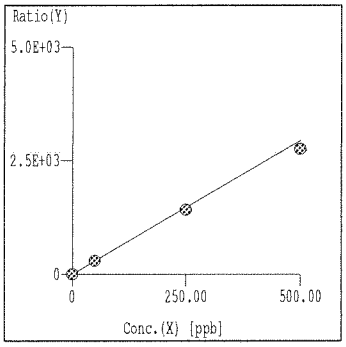
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.040E-001*X +5.499E-002
X = 1.656E+000*Y -9.104E-002
DL = 6.624E-03 ppb
BEC = 9.104E-02 ppb

Step	Mass	Element	ISTD	Unit
(1)	78	Se	72	ppb



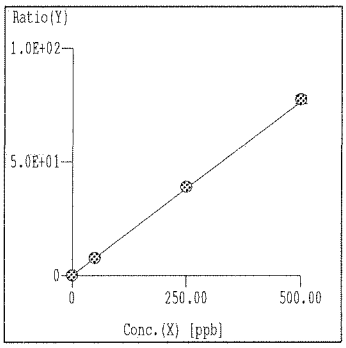
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.307E-001*X +1.712E-003
X = 7.651E+000*Y -1.310E-002
DL = 1.289E-02 ppb
BEC = 1.310E-02 ppb

Step	Mass	Element	ISTD	Unit
(3)	88	Sr	72	ppb



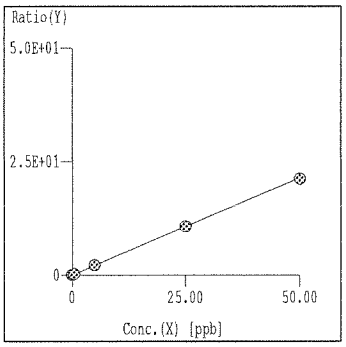
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.879E+000*X +1.155E-001
X = 1.701E-001*Y -1.964E-002
DL = 5.562E-03 ppb
BEC = 1.964E-02 ppb

Step	Mass	Element	ISTD	Unit
(3)	95	Mo	115	ppb



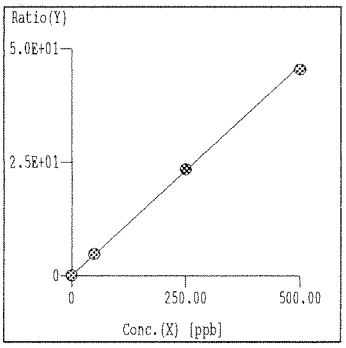
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.530E-001*X +2.013E-003
X = 6.535E+000*Y -1.316E-002
DL = 3.660E-03 ppb
BEC = 1.316E-02 ppb

Step	Mass	Element	ISTD	Unit
(3)	107	Ag	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.295E-001*X +1.784E-003
X = 2.328E+000*Y -4.152E-003
DL = 3.166E-03 ppb
BEC = 4.152E-03 ppb

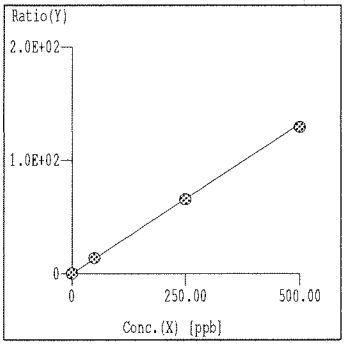
Step	Mass	Element	ISTD	Unit
(3)	111	Cd	115	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 9.278E-002*X +3.953E-004
X = 1.078E+001*Y -4.261E-003
DL = 1.272E-02 ppb
BEC = 4.261E-03 ppb

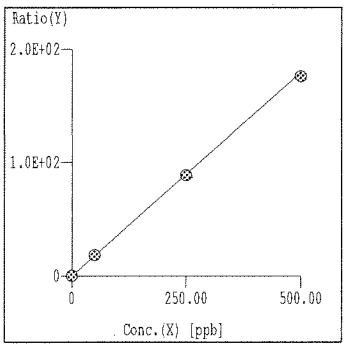
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 118 Sn	115	ppb



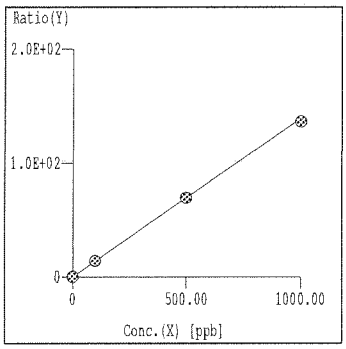
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.642E-001*X +5.491E-003
X = 3.786E+000*Y -2.079E-002
DL = 4.962E-03 ppb
BEC = 2.079E-02 ppb

Step Mass Element	ISTD	Unit
(3) 121 Sb	115	ppb



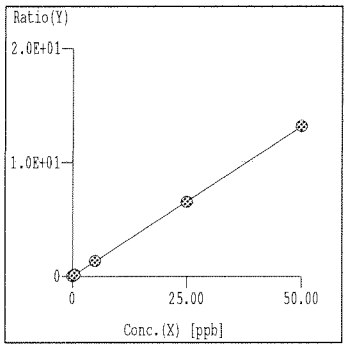
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.595E-001*X +2.297E-002
X = 2.782E+000*Y -6.389E-002
DL = 3.218E-03 ppb
BEC = 6.389E-02 ppb

Step Mass Element	ISTD	Unit
(3) 137 Ba	115	ppb



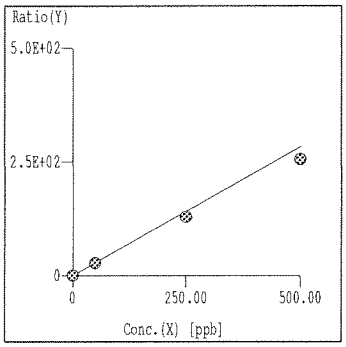
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.397E-001*X +3.630E-003
X = 7.159E+000*Y -2.599E-002
DL = 6.620E-03 ppb
BEC = 2.599E-02 ppb

Step Mass Element	ISTD	Unit
(3) 182 W	159	ppb



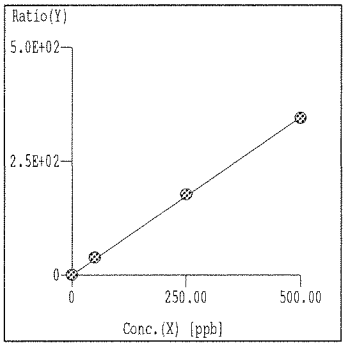
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.639E-001*X +3.754E-003
X = 3.789E+000*Y -1.422E-002
DL = 5.449E-03 ppb
BEC = 1.422E-02 ppb

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.661E-001*X +4.535E-003
X = 1.766E+000*Y -8.011E-003
DL = 1.702E-03 ppb
BEC = 8.011E-03 ppb

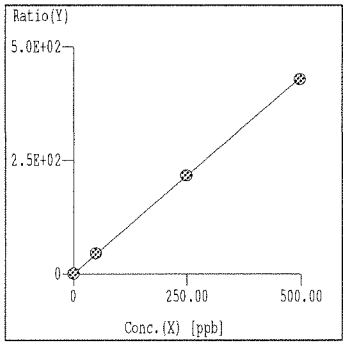
Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.938E-001*X +1.568E-002
X = 1.441E+000*Y -2.261E-002
DL = 2.666E-03 ppb
BEC = 2.261E-02 ppb

=== Graph Detail ===

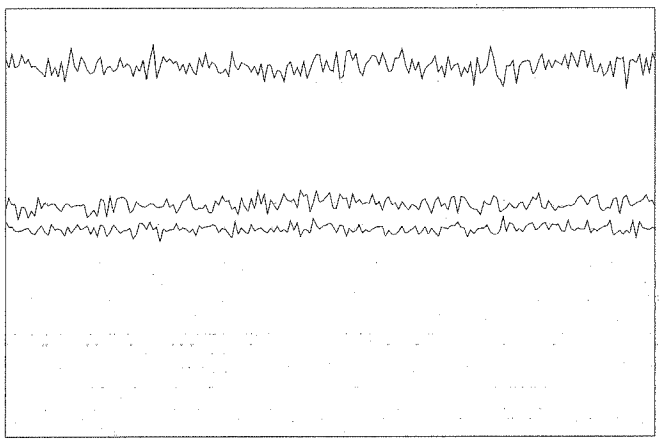
Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 8.675E-001*X +1.986E-003
X = 1.153E+000*Y -2.289E-003
DL = 1.184E-03 ppb
BEC = 2.289E-03 ppb

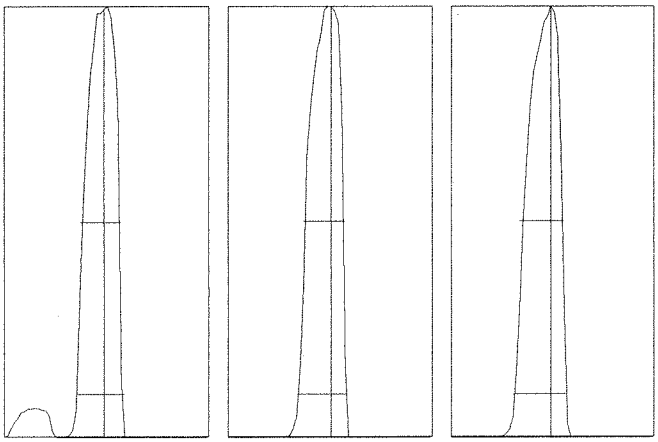
Tune Report

Tune File : NORM.U
Comment : IF6B10



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.716%
Doubly Charged:	70/140	0.746%

m/z	Range	Count	Mean	RSD%	Background
7	50,000	26598.0	27154.6	2.58	5.80
89	100,000	48373.0	48497.9	2.10	2.70
205	50,000	43690.0	43282.9	2.29	6.20
156/140	5	1.961%	1.741%	4.86	
70/140	2	0.809%	0.806%	6.24	



m/z:	7	89	205
Height:	27,037	49,135	44,046
Axis:	7.00	89.05	205.00
W-50%:	0.60	0.60	0.65
W-10%:	0.700	0.7500	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : Feb 23, 2016 15:00:47
Printed : Feb 23, 2016 15:00:50

Tune Report

Tune File : NORM.U
Comment : IF6B10

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-20 V	Axis Gain	:	0.9995
Torch-H	:	-0.7 mm	Omega Lens-ce	:	1.6 V	Axis Offset	:	-0.05
Torch-V	:	0.5 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	2 V			
Makeup Gas	:	0.12 L/min	Cell Exit	:	-36 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2120 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1430 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

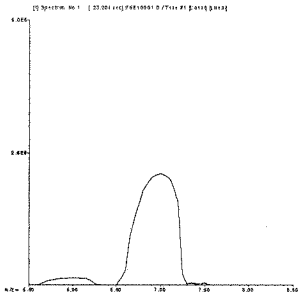
Generated : Feb 23, 2016 15:00:47
Printed : Feb 23, 2016 15:00:52

6020 QC Tune Report

Data File:	**C:\DATA\IF62016\B\IF6B10.B\F6B10001.D**
Date Acquired:	**Feb 23 2016 03:12 pm**
Acq. Method:	**TN6020_C.M**
Operator:	**CCapul**
Sample Name:	**6020tunchk**
Misc Info:	
Vial Number:	**1301**
Current Method:	**C:\ICPCHEM\1\METHODS\TN6020_C.M**

RSD (%)

Element	Actual	Required	Flag
7 Li	3.48	5.00	
59 Co	1.82	5.00	
115 In	0.69	5.00	
205 Tl	2.36	5.00	



7 Li

Mass Calib.

Actual: 7.00

Required: 6.90 - 7.10

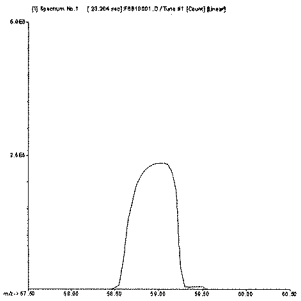
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



59 Co

Mass Calib.

Actual: 59.00

Required: 58.90 - 59.10

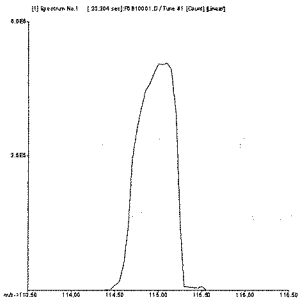
Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:



115 In

Mass Calib.

Actual: 115.05

Required: 114.90 - 115.10

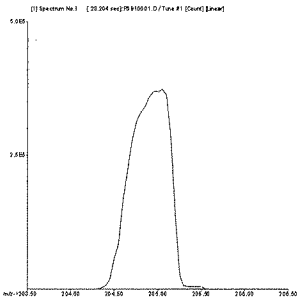
Flag:

Peak Width-10%

Actual: 0.60

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10003
Date Acquired:	Feb 23 2016 03:21 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H
Last Cal Update:	Feb 23 2016 03:24 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2098158.00	A	32370.00	1.54
7	Li	131929.20	P	848.30	0.64
9	Be	181.12	P	27.15	14.99
11	B	8200.31	P	495.40	6.04
23	Na	237353.20	P	897.90	0.38
24	Mg	24893.70	P	422.60	1.70
27	Al	15168.23	P	156.40	1.03
28	Si	6131.69	P	239.20	3.90
31	P	29019.70	P	423.00	1.46
39	K	61240.26	P	606.10	0.99
40	Ca	49277.85	P	158.50	0.32
45	Sc	1250965.00	A	15300.00	1.22
45	Sc	296617.59	P	1709.00	0.58
45	Sc	2714405.00	A	29900.00	1.10
47	Ti	102.23	P	20.09	19.65
51	V	2747.84	P	50.68	1.84
52	Cr	907.59	P	53.86	5.93
55	Mn	3772.85	P	142.30	3.77
56	Fe	26485.97	P	131.90	0.50
59	Co	653.37	P	54.58	8.35
60	Ni	622.24	P	28.17	4.53
63	Cu	452.01	P	5.93	1.31
66	Zn	1637.94	P	127.40	7.78
72	Ge	315164.41	P	3695.00	1.17
72	Ge	143935.09	P	990.10	0.69
72	Ge	590487.50	P	3515.00	0.60
75	As	75.56	P	2.52	3.34
78	Se	7.11	P	1.39	19.52
88	Sr	1068.97	P	33.72	3.15
90	Zr	660.04	P	35.12	5.32
95	Mo	154.45	P	13.47	8.72
107	Ag	67.78	P	5.09	7.51
111	Cd	27.92	P	12.82	45.91
115	In	4343332.00	A	17840.00	0.41
118	Sn	352.24	P	16.78	4.76
121	Sb	1356.78	P	25.17	1.86
137	Ba	378.91	P	9.62	2.54
159	Tb	7089308.00	A	80370.00	1.13
182	W	484.47	P	40.74	8.41
205	Tl	530.03	P	24.04	4.54
208	Pb	1294.52	P	44.39	3.43
209	Bi	4705313.00	A	39700.00	0.84
235	U	8.89	P	10.18	114.52
238	U	231.12	P	13.47	5.83

Calibration Blank QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10004
Date Acquired:	Feb 23 2016 03:25 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H
Last Cal Update:	Feb 23 2016 03:24 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2039385.00	A	30960.00	1.52
7	Li	128154.50	P	918.50	0.72
9	Be	136.67	P	25.17	18.42
11	B	4370.79	P	150.80	3.45
23	Na	230650.70	P	1276.00	0.55
24	Mg	17190.78	P	468.40	2.72
27	Al	9342.16	P	334.50	3.58
28	Si	3073.77	P	122.20	3.98
31	P	27958.67	P	357.40	1.28
39	K	60027.49	P	375.70	0.63
40	Ca	60936.29	P	413.10	0.68
45	Sc	1257123.00	A	8264.00	0.66
45	Sc	288745.31	P	2947.00	1.02
45	Sc	2644090.00	A	16940.00	0.64
47	Ti	66.67	P	12.02	18.03
51	V	2717.61	P	78.68	2.90
52	Cr	738.91	P	24.63	3.33
55	Mn	3436.09	P	54.00	1.57
56	Fe	20060.00	P	519.40	2.59
59	Co	453.36	P	43.72	9.64
60	Ni	283.56	P	12.86	4.54
63	Cu	247.78	P	4.02	1.62
66	Zn	1227.87	P	108.80	8.86
72	Ge	317440.69	P	1685.00	0.53
72	Ge	141011.09	P	2116.00	1.50
72	Ge	577121.00	P	2894.00	0.50
75	As	77.33	P	2.67	3.45
78	Se	5.33	P	1.76	33.08
88	Sr	644.48	P	59.85	9.29
90	Zr	560.03	P	50.45	9.01
95	Mo	84.45	P	8.39	9.93
107	Ag	76.67	P	18.56	24.21
111	Cd	14.44	P	16.42	113.67
115	In	4208195.00	A	39120.00	0.93
118	Sn	226.68	P	20.28	8.95
121	Sb	965.62	P	7.70	0.80
137	Ba	152.23	P	12.62	8.29
159	Tb	6955865.00	A	48300.00	0.69
182	W	312.24	P	32.89	10.53
205	Tl	286.68	P	24.04	8.39
208	Pb	1082.28	P	42.86	3.96
209	Bi	4644330.00	A	34450.00	0.74
235	U	8.89	P	3.85	43.30
238	U	133.34	P	23.09	17.32

Calibration Standard QC Report

Data File: C:\DATA\IF62016\B\IF6B10.B\F6B10005.D\F6B10005.D#
Date Acquired: Feb 23 2016 03:29 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 23 2016 03:28 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2057308.00	A	21680.00	1.05
7 Li	137911.00	P	2443.00	1.77
9 Be	3396.06	P	46.00	1.35
11 B	6700.62	P	261.90	3.91
23 Na	335878.09	P	3900.00	1.16
24 Mg	754377.50	A	12420.00	1.65
27 Al	941302.63	A	3933.00	0.42
28 Si	134511.70	P	272.60	0.20
31 P	49892.50	P	969.70	1.94
39 K	102458.40	P	510.30	0.50
40 Ca	440652.31	P	4102.00	0.93
45 Sc	1239376.00	A	21130.00	1.70
45 Sc	291004.50	P	1984.00	0.68
45 Sc	2620884.00	A	19980.00	0.76
47 Ti	1028.96	P	53.38	5.19
51 V	5527.97	P	35.31	0.64
52 Cr	3911.66	P	89.17	2.28
55 Mn	19646.10	P	152.30	0.78
56 Fe	612603.81	P	2918.00	0.48
59 Co	12589.26	P	320.30	2.54
60 Ni	1404.52	P	38.56	2.75
63 Cu	3047.90	P	68.40	2.24
66 Zn	4682.02	P	162.80	3.48
72 Ge	314388.50	P	2153.00	0.68
72 Ge	141766.70	P	531.80	0.38
72 Ge	576060.31	P	5523.00	0.96
75 As	524.90	P	17.00	3.24
78 Se	224.89	P	24.73	11.00
88 Sr	17966.29	P	431.90	2.40
90 Zr	17937.47	P	148.10	0.83
95 Mo	3436.09	P	171.40	4.99
107 Ag	9015.41	P	162.10	1.80
111 Cd	2135.81	P	139.90	6.55
115 In	4239513.00	A	35760.00	0.84
118 Sn	5927.04	P	90.13	1.52
121 Sb	8721.91	P	252.10	2.89
137 Ba	3129.35	P	94.80	3.03
159 Tb	6962394.00	A	68230.00	0.98
182 W	8523.03	P	185.80	2.18
205 Tl	21878.82	P	55.57	0.25
208 Pb	30017.89	P	725.70	2.42
209 Bi	4650561.00	A	35150.00	0.76
235 U	233.34	P	20.00	8.57
238 U	32619.89	P	239.80	0.74

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2057308.30	1.05	2039384.80	100.9	60 - 125	
45 Sc	1239376.30	1.70	1257122.80	98.6	60 - 125	
45 Sc	291004.50	0.68	288745.31	100.8	60 - 125	
45 Sc	2620883.80	0.76	2644089.80	99.1	60 - 125	
72 Ge	314388.50	0.68	317440.69	99.0	60 - 125	
72 Ge	141766.72	0.38	141011.13	100.5	60 - 125	
72 Ge	576060.25	0.96	577121.00	99.8	60 - 125	
115 In	4239513.50	0.84	4208195.00	100.7	60 - 125	
159 Tb	6962394.50	0.98	6955865.50	100.1	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10006.D\F6B10006.D#
Date Acquired:	Feb 23 2016 03:34 pm
Operator:	CCapul
Sample Name:	S2 50
Misc Info:	
Vial Number:	1105
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update:	Feb 23 2016 03:32 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1900630.00	A	32750.00	1.72
7 Li	218097.41	P	3668.00	1.68
9 Be	32965.94	P	401.30	1.22
11 B	27029.79	P	125.40	0.46
23 Na	20736740.00	A	21910.00	0.11
24 Mg	70117320.00	A	390000.00	0.56
27 Al	88218040.00	A	187500.00	0.21
28 Si	663982.81	P	2637.00	0.40
31 P	71416.61	P	166.70	0.23
39 K	3926035.00	A	56540.00	1.44
40 Ca	37389088.00	A	107700.00	0.29
45 Sc	1209089.00	A	11710.00	0.97
45 Sc	275783.69	P	1565.00	0.57
45 Sc	2558540.00	A	21000.00	0.82
47 Ti	87970.24	P	501.00	0.57
51 V	255484.09	P	470.90	0.18
52 Cr	304425.91	P	1208.00	0.40
55 Mn	8460957.00	A	106700.00	1.26
56 Fe	52306580.00	A	419200.00	0.80
59 Co	1095919.00	A	10040.00	0.92
60 Ni	99156.78	P	374.30	0.38
63 Cu	251576.91	P	518.90	0.21
66 Zn	183743.30	P	1826.00	0.99
72 Ge	299600.19	P	2182.00	0.73
72 Ge	135266.41	P	963.10	0.71
72 Ge	552778.88	P	3403.00	0.62
75 As	41330.85	P	115.80	0.28
78 Se	20263.21	P	104.50	0.52
88 Sr	1632452.00	A	13980.00	0.86
90 Zr	134191.00	P	698.30	0.52
95 Mo	311014.81	P	1286.00	0.41
107 Ag	87594.19	P	242.60	0.28
111 Cd	193364.00	P	2560.00	1.32
115 In	4071447.00	A	13380.00	0.33
118 Sn	553292.81	P	4052.00	0.73
121 Sb	744996.69	P	5260.00	0.71
137 Ba	570159.69	P	2397.00	0.42
159 Tb	6914250.00	A	107600.00	1.56
182 W	91314.25	P	675.00	0.74
205 Tl	1896300.00	A	12000.00	0.63
208 Pb	2655210.00	A	3239.00	0.12
209 Bi	4467237.00	A	21070.00	0.47
235 U	18191.15	P	154.30	0.85
238 U	3087471.00	A	22230.00	0.72

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1900629.80	1.72	2039384.80	93.2	60 - 125	
45 Sc	1209089.10	0.97	1257122.80	96.2	60 - 125	
45 Sc	275783.66	0.57	288745.31	95.5	60 - 125	
45 Sc	2558540.50	0.82	2644089.80	96.8	60 - 125	
72 Ge	299600.22	0.73	317440.69	94.4	60 - 125	
72 Ge	135266.36	0.71	141011.13	95.9	60 - 125	
72 Ge	552778.88	0.62	577121.00	95.8	60 - 125	
115 In	4071446.50	0.33	4208195.00	96.8	60 - 125	
159 Tb	6914250.00	1.56	6955865.50	99.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10007.D\F6B10007.D#
Date Acquired:	Feb 23 2016 03:38 pm
Operator:	CCapul
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update:	Feb 23 2016 03:37 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1782782.00	A	40330.00	2.26
7 Li	569754.00	M	12220.00	2.14
9 Be	155282.00	P	1203.00	0.77
11 B	113261.90	P	2738.00	2.42
23 Na	99023744.00	A	1075000.00	1.09
24 Mg	330954110.00	A	3285000.00	0.99
27 Al	418732000.00	A	4036000.00	0.96
28 Si	3127181.00	A	38630.00	1.24
31 P	244684.70	P	1283.00	0.52
39 K	18612470.00	A	31980.00	0.17
40 Ca	180871900.00	A	858600.00	0.47
45 Sc	1210574.00	A	5147.00	0.43
45 Sc	277310.91	P	1358.00	0.49
45 Sc	2517747.00	A	37010.00	1.47
47 Ti	422495.50	P	6273.00	1.48
51 V	1214655.00	A	5662.00	0.47
52 Cr	1444965.00	A	11690.00	0.81
55 Mn	40065920.00	A	450300.00	1.12
56 Fe	252586700.00	A	2352000.00	0.93
59 Co	5060023.00	A	87790.00	1.74
60 Ni	465621.81	P	193.10	0.04
63 Cu	1141282.00	A	19390.00	1.70
66 Zn	860640.38	P	4167.00	0.48
72 Ge	297780.00	P	2217.00	0.74
72 Ge	134043.30	P	572.20	0.43
72 Ge	548539.13	P	8244.00	1.50
75 As	202293.41	P	221.30	0.11
78 Se	97369.18	P	444.40	0.46
88 Sr	7761094.00	A	21030.00	0.27
90 Zr	539283.38	P	7792.00	1.44
95 Mo	1490198.00	A	12880.00	0.86
107 Ag	409291.59	P	4142.00	1.01
111 Cd	896946.63	M	11330.00	1.26
115 In	3830420.00	A	28020.00	0.73
118 Sn	2501411.00	A	22370.00	0.89
121 Sb	3395224.00	A	30480.00	0.90
137 Ba	2663030.00	A	33430.00	1.26
159 Tb	6738930.00	A	101300.00	1.50
182 W	440767.31	P	6637.00	1.51
205 Tl	8671682.00	A	68530.00	0.79
208 Pb	11932540.00	A	113500.00	0.95
209 Bi	4193478.00	A	18600.00	0.44
235 U	87863.61	P	728.40	0.83
238 U	14574890.00	A	104400.00	0.72

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1782781.60	2.26	2039384.80	87.4	60 - 125	
45 Sc	1210574.00	0.43	1257122.80	96.3	60 - 125	
45 Sc	277310.84	0.49	288745.31	96.0	60 - 125	
45 Sc	2517747.30	1.47	2644089.80	95.2	60 - 125	
72 Ge	297780.03	0.74	317440.69	93.8	60 - 125	
72 Ge	134043.30	0.43	141011.13	95.1	60 - 125	
72 Ge	548539.06	1.50	577121.00	95.0	60 - 125	
115 In	3830420.30	0.73	4208195.00	91.0	60 - 125	
159 Tb	6738930.00	1.50	6955865.50	96.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10008.D\F6B10008.D#
Date Acquired:	Feb 23 2016 03:42 pm
Operator:	CCapul
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update:	Feb 23 2016 03:40 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1737016.00	A	21210.00	1.22
7 Li	996096.31	A	20550.00	2.06
9 Be	303038.19	P	1529.00	0.50
11 B	212364.09	P	3228.00	1.52
23 Na	191946000.00	A	2888000.00	1.50
24 Mg	642246780.00	A	3877000.00	0.60
27 Al	820750080.00	A	8755000.00	1.07
28 Si	6069383.00	A	76820.00	1.27
31 P	462723.81	P	3861.00	0.83
39 K	36566780.00	A	144800.00	0.40
40 Ca	354280190.00	A	3832000.00	1.08
45 Sc	1220971.00	A	15880.00	1.30
45 Sc	274406.59	P	661.00	0.24
45 Sc	2549923.00	A	36160.00	1.42
47 Ti	826645.69	A	14880.00	1.80
51 V	2401060.00	A	19230.00	0.80
52 Cr	2807771.00	A	28110.00	1.00
55 Mn	78420008.00	A	1021000.00	1.30
56 Fe	495400990.00	A	6093000.00	1.23
59 Co	9751845.00	A	108500.00	1.11
60 Ni	888760.69	M	8338.00	0.94
63 Cu	2182115.00	A	7720.00	0.35
66 Zn	1619064.00	A	29760.00	1.84
72 Ge	292083.00	P	1252.00	0.43
72 Ge	130167.40	P	714.30	0.55
72 Ge	543526.88	P	5848.00	1.08
75 As	392966.00	P	1658.00	0.42
78 Se	188432.91	P	872.50	0.46
88 Sr	14967350.00	A	170900.00	1.14
90 Zr	1006510.00	A	5239.00	0.52
95 Mo	2890212.00	A	48360.00	1.67
107 Ag	790470.63	P	11940.00	1.51
111 Cd	1693333.00	A	17310.00	1.02
115 In	3731038.00	A	40960.00	1.10
118 Sn	4813531.00	A	13350.00	0.28
121 Sb	6562100.00	A	9751.00	0.15
137 Ba	5089144.00	A	24860.00	0.49
159 Tb	6518824.00	A	35750.00	0.55
182 W	861017.19	P	4970.00	0.58
205 Tl	16654490.00	A	314600.00	1.89
208 Pb	22464110.00	A	98730.00	0.44
209 Bi	3922189.00	A	33400.00	0.85
235 U	166152.20	P	801.00	0.48
238 U	27942790.00	A	129600.00	0.46

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1737015.80	1.22	2039384.80	85.2	60 - 125	
45 Sc	1220970.80	1.30	1257122.80	97.1	60 - 125	
45 Sc	274406.56	0.24	288745.31	95.0	60 - 125	
45 Sc	2549923.00	1.42	2644089.80	96.4	60 - 125	
72 Ge	292083.03	0.43	317440.69	92.0	60 - 125	
72 Ge	130167.39	0.55	141011.13	92.3	60 - 125	
72 Ge	543526.94	1.08	577121.00	94.2	60 - 125	
115 In	3731037.80	1.10	4208195.00	88.7	60 - 125	
159 Tb	6518823.50	0.55	6955865.50	93.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10009.D\F6B10009.D#
Date Acquired:	Feb 23 2016 03:46 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	30.09	ppb	665739.5	0.96	30.00	90 - 110	
9 Be	32.07	ppb	191993.5	0.56	30.00	90 - 110	
11 B	30.69	ppb	135788.1	0.51	30.00	90 - 110	
23 Na	30110.00	ppb	118706000.0	0.76	30000.00	90 - 110	
24 Mg	28490.00	ppb	396929600.0	1.13	30000.00	90 - 110	
27 Al	28320.00	ppb	505634590.0	1.85	30000.00	90 - 110	
28 Si	3048.00	ppb	3797660.0	0.49	3000.00	90 - 110	
31 P	290.70	ppb	288234.0	0.82	300.00	90 - 110	
39 K	29960.00	ppb	22765880.0	0.93	30000.00	90 - 110	
40 Ca	31300.00	ppb	226953900.0	0.66	30000.00	90 - 110	
47 Ti	294.20	ppb	511516.9	0.39	300.00	90 - 110	
51 V	294.70	ppb	1494935.0	1.16	300.00	90 - 110	
52 Cr	286.70	ppb	1740090.0	0.66	300.00	90 - 110	
55 Mn	1990.00	ppb	53548288.0	0.63	2000.00	90 - 110	
56 Fe	30780.00	ppb	310018590.0	0.94	30000.00	90 - 110	
59 Co	280.00	ppb	6159661.0	1.09	300.00	90 - 110	
60 Ni	298.50	ppb	568525.3	0.19	300.00	90 - 110	
63 Cu	283.00	ppb	1381635.0	0.64	300.00	90 - 110	
66 Zn	287.90	ppb	1006853.0	0.38	300.00	90 - 110	
75 As	291.80	ppb	240644.8	0.35	300.00	90 - 110	
78 Se	294.60	ppb	116335.6	1.06	300.00	90 - 110	
88 Sr	278.90	ppb	9214761.0	0.78	300.00	90 - 110	
90 Zr	26.81	ppb	670822.6	0.39	30.00	90 - 110	Fail
95 Mo	290.90	ppb	1762346.0	1.74	300.00	90 - 110	
107 Ag	29.50	ppb	501746.9	1.06	30.00	90 - 110	
111 Cd	289.20	ppb	1062607.0	1.30	300.00	90 - 110	
118 Sn	286.50	ppb	2997222.0	0.27	300.00	90 - 110	
121 Sb	276.90	ppb	3942590.0	0.92	300.00	90 - 110	
137 Ba	297.10	ppb	1643353.0	1.18	300.00	90 - 110	
182 W	27.03	ppb	486075.6	0.95	30.00	90 - 110	
205 Tl	275.30	ppb	10615750.0	1.48	300.00	90 - 110	
208 Pb	307.70	ppb	14540920.0	0.53	300.00	90 - 110	
235 U	2.28	ppb	129935.6	1.33	2.20	90 - 110	
238 U	296.50	ppb	17523900.0	0.08	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1780402.9	0.92	2039384.80	87.3	60 - 125	
45 Sc	1236078.1	0.66	1257122.80	98.3	60 - 125	
45 Sc	282872.6	0.35	288745.31	98.0	60 - 125	
45 Sc	2604244.3	0.57	2644089.80	98.5	60 - 125	
72 Ge	302162.4	0.81	317440.69	95.2	60 - 125	
72 Ge	136499.8	0.15	141011.13	96.8	60 - 125	
72 Ge	562056.1	0.43	577121.00	97.4	60 - 125	
115 In	3959975.8	1.67	4208195.00	94.1	60 - 125	
159 Tb	6811582.0	0.73	6955865.50	97.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10010.D\F6B10010.D#
Date Acquired:	Feb 23 2016 03:50 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0735	ppb	118442.1	109.74	0.20	
9 Be	0.0102	ppb	98.9	16.12	0.10	
11 B	0.0855	ppb	4436.4	35.55	5.00	
23 Na	-17.0000	ppb	163546.2	5.30	40.00	
24 Mg	0.7958	ppb	28114.2	29.84	10.00	
27 Al	1.0140	ppb	27375.3	18.18	20.00	
28 Si	0.8525	ppb	4243.0	9.98	20.00	
31 P	-4.6150	ppb	23465.8	2.21	10.00	
39 K	-3.6330	ppb	58020.3	29.98	20.00	
40 Ca	2.9140	ppb	83283.1	5.31	25.00	
47 Ti	0.0066	ppb	83.3	80.05	0.50	
51 V	-0.0425	ppb	2645.4	18.49	0.50	
52 Cr	-0.0005	ppb	735.1	1632.60	0.20	
55 Mn	0.0715	ppb	5523.5	27.61	0.20	
56 Fe	8.0130	ppb	102847.2	6.88	10.00	
59 Co	0.0125	ppb	750.0	16.13	0.20	
60 Ni	0.0320	ppb	370.7	8.29	0.20	
63 Cu	0.0359	ppb	424.2	11.59	0.40	
66 Zn	0.0355	ppb	1321.2	13.45	2.00	
75 As	0.0405	ppb	112.7	12.62	0.20	
78 Se	0.0799	ppb	38.7	1.38	0.20	
90 Zr	-0.0147	ppb	310.0	1.70	2.00	
95 Mo	0.2630	ppb	1785.7	12.30	0.40	
107 Ag	0.0000	ppb	75.6	7912.80	0.20	
111 Cd	0.0128	ppb	66.8	89.08	0.20	
118 Sn	0.1570	ppb	1984.7	8.90	0.20	
121 Sb	0.3141	ppb	5743.6	8.11	0.40	
137 Ba	0.0205	ppb	274.5	12.16	0.20	
182 W	0.0360	ppb	927.8	3.56	1.00	
205 Tl	0.0228	ppb	1220.1	3.06	0.20	
208 Pb	0.0134	ppb	1749.0	17.50	0.10	
235 U	0.0003	ppb	30.0	89.94	1.00	
238 U	0.0390	ppb	2503.7	9.74	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1900795.8	2.22	2039384.80	93.2	60 - 125	
45 Sc	1263412.6	0.55	1257122.80	100.5	60 - 125	
45 Sc	286864.4	0.59	288745.31	99.3	60 - 125	
45 Sc	2609126.5	0.53	2644089.80	98.7	60 - 125	
72 Ge	318128.0	1.08	317440.69	100.2	60 - 125	
72 Ge	141879.5	1.17	141011.13	100.6	60 - 125	
72 Ge	573568.9	0.51	577121.00	99.4	60 - 125	
115 In	4227874.0	0.86	4208195.00	100.5	60 - 125	
159 Tb	6999276.5	0.93	6955865.50	100.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10011.D\F6B10011.D#
Date Acquired:	Feb 23 2016 03:54 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLB2301
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	138651.2	0.0000	0.8603	ppb	2.28	50.00	
9 Be	# 3	6	6270.4	0.0000	0.9630	ppb	2.04	50.00	
11 B	# 3	6	48366.6	0.0000	9.5120	ppb	2.73	50.00	
23 Na	# 1	45	587565.6	0.0000	91.0700	ppb	2.05	50000.00	
24 Mg	# 3	45	1433448.0	0.0000	99.7300	ppb	1.59	50000.00	
27 Al	# 3	45	1763210.0	0.0000	96.3400	ppb	1.10	50000.00	
28 Si	# 1	45	4448.6	0.0000	1.0820	ppb	37.79	5000.00	
31 P	# 3	45	71526.6	0.0000	47.5200	ppb	2.36	500.00	
39 K	# 2	45	140351.0	0.0000	100.6000	ppb	1.13	50000.00	
40 Ca	# 1	45	835400.0	0.0000	106.5000	ppb	0.86	50000.00	
47 Ti	# 3	45	2075.8	0.0000	1.1300	ppb	3.34	500.00	
51 V	# 2	45	7691.2	0.0000	0.9165	ppb	2.24	500.00	
52 Cr	# 2	45	6803.8	0.0000	0.9683	ppb	1.00	500.00	
55 Mn	# 3	45	35897.5	0.0000	1.1760	ppb	2.54	3000.00	
56 Fe	# 1	45	1117280.0	0.0000	108.5000	ppb	1.12	50000.00	
59 Co	# 3	45	23947.2	0.0000	1.0460	ppb	2.82	500.00	
60 Ni	# 2	45	2500.0	0.0000	1.1140	ppb	2.62	500.00	
63 Cu	# 2	45	5672.7	0.0000	1.0780	ppb	1.77	500.00	
66 Zn	# 3	72	41138.1	0.0000	10.8100	ppb	1.72	500.00	
75 As	# 2	72	944.7	0.0000	0.9809	ppb	4.63	500.00	
78 Se	# 1	72	405.1	0.0000	0.9756	ppb	2.75	500.00	
88 Sr	# 3	72	71260.4	0.0000	2.0210	ppb	1.05	500.00	
90 Zr	# 3	72	78614.5	0.0000	2.9490	ppb	1.78	50.00	
95 Mo	# 3	115	6894.1	0.0000	1.0380	ppb	3.27	500.00	
107 Ag	# 3	115	17740.6	0.0000	0.9599	ppb	1.21	50.00	
111 Cd	# 3	115	4219.7	0.0000	1.0570	ppb	2.49	500.00	
118 Sn	# 3	115	11767.6	0.0000	1.0190	ppb	2.79	500.00	
121 Sb	# 3	115	17774.1	0.0000	1.0900	ppb	2.12	500.00	
137 Ba	# 3	115	6399.5	0.0000	1.0430	ppb	1.36	1000.00	
182 W	# 3	159	33184.2	0.0000	1.6980	ppb	1.81	50.00	
205 Tl	# 3	159	41991.0	0.0000	1.0020	ppb	2.52	500.00	
208 Pb	# 3	159	58145.6	0.0000	1.1190	ppb	2.42	500.00	
235 U	# 3	159	456.7	0.0000	0.0073	ppb	8.39	30.00	
238 U	# 3	159	65521.3	0.0000	1.0260	ppb	0.61	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1926485.40	0.99	2039384.80	94.5	60 - 125	
45 Sc # 1	1240981.10	1.77	1257122.80	98.7	60 - 125	
45 Sc # 2	291508.19	0.91	288745.31	101.0	60 - 125	
45 Sc # 3	2654933.30	1.14	2644089.80	100.4	60 - 125	
72 Ge # 1	313494.63	0.94	317440.69	98.8	60 - 125	
72 Ge # 2	145919.00	0.47	141011.13	103.5	60 - 125	
72 Ge # 3	593934.88	1.04	577121.00	102.9	60 - 125	
115 In # 3	4284460.00	1.12	4208195.00	101.8	60 - 125	
159 Tb # 3	7343133.00	0.92	6955865.50	105.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10012.D\F6B10012.D#
Date Acquired:	Feb 23 2016 03:58 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	MRLB2302
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	129960.5	0.0000	0.4285	ppb	15.54	50.00	
9 Be	# 3	6	3310.5	0.0000	0.5063	ppb	1.69	50.00	
11 B	# 3	6	5891.3	0.0000	0.3858	ppb	13.89	50.00	
23 Na	# 1	45	387062.0	0.0000	37.3000	ppb	3.85	50000.00	
24 Mg	# 3	45	755731.7	0.0000	51.8600	ppb	2.17	50000.00	
27 Al	# 3	45	933405.4	0.0000	50.6200	ppb	2.07	50000.00	
28 Si	# 1	45	3481.7	0.0000	0.2183	ppb	98.17	5000.00	
31 P	# 3	45	22640.4	0.0000	-6.0350	ppb	2.50	500.00	
39 K	# 2	45	100694.1	0.0000	46.5300	ppb	2.73	50000.00	
40 Ca	# 1	45	495846.0	0.0000	57.7100	ppb	1.68	50000.00	
47 Ti	# 3	45	1012.3	0.0000	0.5283	ppb	7.59	500.00	
51 V	# 2	45	5188.7	0.0000	0.4116	ppb	3.68	500.00	
52 Cr	# 2	45	3887.9	0.0000	0.4861	ppb	0.63	500.00	
55 Mn	# 3	45	20798.8	0.0000	0.6229	ppb	1.98	3000.00	
56 Fe	# 1	45	629020.9	0.0000	58.3200	ppb	1.38	50000.00	
59 Co	# 3	45	12678.2	0.0000	0.5424	ppb	3.15	500.00	
60 Ni	# 2	45	1477.9	0.0000	0.5740	ppb	3.31	500.00	
63 Cu	# 2	45	3139.5	0.0000	0.5584	ppb	2.89	500.00	
66 Zn	# 3	72	18314.3	0.0000	4.6100	ppb	4.45	500.00	
75 As	# 2	72	527.1	0.0000	0.5008	ppb	1.46	500.00	
78 Se	# 1	72	213.1	0.0000	0.4909	ppb	3.36	500.00	
88 Sr	# 3	72	18528.2	0.0000	0.5092	ppb	1.48	500.00	
90 Zr	# 3	72	901.2	0.0000	0.0072	ppb	11.80	50.00	
95 Mo	# 3	115	3727.3	0.0000	0.5434	ppb	1.27	500.00	
107 Ag	# 3	115	9299.0	0.0000	0.4905	ppb	0.39	50.00	
111 Cd	# 3	115	2003.8	0.0000	0.4892	ppb	1.29	500.00	
118 Sn	# 3	115	6279.4	0.0000	0.5224	ppb	2.08	500.00	
121 Sb	# 3	115	9530.2	0.0000	0.5419	ppb	1.99	500.00	
137 Ba	# 3	115	3319.4	0.0000	0.5170	ppb	1.94	1000.00	
182 W	# 3	159	367.8	0.0000	0.0048	ppb	28.60	50.00	
205 Tl	# 3	159	22174.9	0.0000	0.5260	ppb	0.42	500.00	
208 Pb	# 3	159	30789.7	0.0000	0.5824	ppb	2.36	500.00	
235 U	# 3	159	241.1	0.0000	0.0038	ppb	28.89	30.00	
238 U	# 3	159	33915.3	0.0000	0.5307	ppb	0.67	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1925166.00	0.64	2039384.80	94.4	60 - 125	
45 Sc # 1	1280401.40	1.31	1257122.80	101.9	60 - 125	
45 Sc # 2	299102.78	0.62	288745.31	103.6	60 - 125	
45 Sc # 3	2662120.30	0.82	2644089.80	100.7	60 - 125	
72 Ge # 1	323522.41	0.21	317440.69	101.9	60 - 125	
72 Ge # 2	147456.56	0.94	141011.13	104.6	60 - 125	
72 Ge # 3	596022.19	0.67	577121.00	103.3	60 - 125	
115 In # 3	4376504.50	0.64	4208195.00	104.0	60 - 125	
159 Tb # 3	7335409.00	0.66	6955865.50	105.5	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10013.D\F6B10013.D#
Date Acquired:	Feb 23 2016 04:03 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.40	ppb	100737.8	20.00	---	
9 Be	0.02	ppb	112.2	15.68	---	
11 B	0.37	ppb	4546.4	10.62	---	
23 Na	98540.00	ppb	353891300.0	0.37	120000.00	
24 Mg	89470.00	ppb	1138689000.0	0.97	120000.00	
27 Al	89100.00	ppb	1453542000.0	0.41	120000.00	
28 Si	5.62	ppb	9193.2	5.29	---	
31 P	97440.00	ppb	79835200.0	0.38	---	
39 K	97840.00	ppb	71120680.0	1.76	120000.00	
40 Ca	102000.00	ppb	674315010.0	1.87	120000.00	
47 Ti	2083.00	ppb	3308290.0	0.60	2400.00	
51 V	0.01	ppb	2752.9	5.03	---	
52 Cr	1.26	ppb	8045.6	0.72	---	
55 Mn	0.32	ppb	11048.0	3.25	---	
56 Fe	101400.00	ppb	931396930.0	0.64	120000.00	
59 Co	0.27	ppb	5861.4	3.35	---	
60 Ni	0.19	ppb	634.7	4.35	---	
63 Cu	0.68	ppb	3399.5	0.86	---	
66 Zn	4.00	ppb	14819.2	1.90	---	
75 As	0.21	ppb	239.3	5.90	---	
78 Se	0.04	ppb	20.7	17.95	---	
88 Sr	0.63	ppb	20868.2	0.90	---	
90 Zr	0.71	ppb	17948.6	2.53	---	
95 Mo	1975.00	ppb	11069370.0	0.85	2400.00	
107 Ag	0.02	ppb	367.8	8.33	---	
111 Cd	0.19	ppb	676.4	14.37	---	
118 Sn	0.11	ppb	1254.5	2.96	---	
121 Sb	0.08	ppb	1850.2	9.18	---	
137 Ba	0.09	ppb	594.5	17.82	---	
182 W	0.12	ppb	2337.0	3.09	---	
205 Tl	0.00	ppb	406.7	51.36	---	
208 Pb	0.23	ppb	11321.2	0.48	---	
235 U	0.00	ppb	22.2	36.12	---	
238 U	0.00	ppb	311.1	34.65	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1499550.8	0.81	2039384.80	73.5	60 - 125	
45 Sc	1127315.0	1.18	1257122.80	89.7	60 - 125	
45 Sc	271097.1	0.74	288745.31	93.9	60 - 125	
45 Sc	2379112.3	0.69	2644089.80	90.0	60 - 125	
72 Ge	280843.6	2.41	317440.69	88.5	60 - 125	
72 Ge	133813.6	0.25	141011.13	94.9	60 - 125	
72 Ge	549763.9	0.55	577121.00	95.3	60 - 125	
115 In	3662463.3	0.41	4208195.00	87.0	60 - 125	
159 Tb	6442123.5	1.19	6955865.50	92.6	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10014.D\F6B10014.D#
Date Acquired:	Feb 23 2016 04:07 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	19.75	ppb	397696.7	1.63	20.00	80 - 120	
9 Be	20.63	ppb	103272.0	1.93	20.00	80 - 120	
11 B	19.37	ppb	72851.5	0.38	20.00	80 - 120	
23 Na	96880.00	ppb	360715580.0	0.64	100000.00	80 - 120	
24 Mg	88610.00	ppb	1148732000.0	1.39	100000.00	80 - 120	
27 Al	88050.00	ppb	1463198000.0	0.62	100000.00	80 - 120	
28 Si	211.70	ppb	252117.8	0.46	200.00	80 - 120	
31 P	96750.00	ppb	80750648.0	0.38	100000.00	80 - 120	
39 K	97620.00	ppb	71325560.0	1.03	100000.00	80 - 120	
40 Ca	100500.00	ppb	689082110.0	0.38	100000.00	80 - 120	
47 Ti	2093.00	ppb	3385532.0	0.59	2000.00	80 - 120	
51 V	20.27	ppb	101588.7	0.75	20.00	80 - 120	
52 Cr	20.42	ppb	120023.7	0.47	20.00	80 - 120	
55 Mn	21.46	ppb	540461.9	0.51	20.00	80 - 120	
56 Fe	100800.00	ppb	959706690.0	1.02	100000.00	80 - 120	
59 Co	20.36	ppb	417189.7	0.31	20.00	80 - 120	
60 Ni	19.83	ppb	36662.4	0.95	20.00	80 - 120	
63 Cu	19.54	ppb	92108.6	1.06	20.00	80 - 120	
66 Zn	20.78	ppb	73466.5	0.47	20.00	80 - 120	
75 As	20.30	ppb	16827.6	1.27	20.00	80 - 120	
78 Se	21.28	ppb	8052.5	1.42	20.00	80 - 120	
88 Sr	19.58	ppb	645168.1	1.13	20.00	80 - 120	
90 Zr	7.52	ppb	187856.7	0.59	20.00	80 - 120	Fail
95 Mo	1998.00	ppb	11511240.0	0.80	2000.00	80 - 120	
107 Ag	17.84	ppb	288644.2	1.14	20.00	80 - 120	
111 Cd	19.80	ppb	69182.0	1.56	20.00	80 - 120	
118 Sn	19.52	ppb	194386.5	0.52	20.00	80 - 120	
121 Sb	20.26	ppb	275064.7	0.48	20.00	80 - 120	
137 Ba	19.88	ppb	104723.9	1.30	20.00	80 - 120	
182 W	19.62	ppb	340422.4	0.41	20.00	80 - 120	
205 Tl	19.25	ppb	716189.8	1.40	20.00	80 - 120	
208 Pb	21.46	ppb	979094.9	0.94	20.00	80 - 120	
235 U	0.15	ppb	8231.8	3.59	0.14	80 - 120	
238 U	19.99	ppb	1139346.0	2.19	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1488740.8	1.18	2039384.80	73.0	60 - 125	
45 Sc	1168746.3	1.18	1257122.80	93.0	60 - 125	
45 Sc	272492.6	0.95	288745.31	94.4	60 - 125	
45 Sc	2423540.3	0.77	2644089.80	91.7	60 - 125	
72 Ge	289363.8	0.72	317440.69	91.2	60 - 125	
72 Ge	136644.3	0.85	141011.13	96.9	60 - 125	
72 Ge	559859.2	1.10	577121.00	97.0	60 - 125	
115 In	3765732.8	0.72	4208195.00	89.5	60 - 125	
159 Tb	6569635.5	0.89	6955865.50	94.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B10.B\F6B10016.D\F6B10016.D#
Date Acquired: Feb 23 2016 04:16 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 23 2016 03:44 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.19 ppb	0.61	25.00	90 - 110	
9 Be	27.17 ppb	1.29	25.00	90 - 110	
11 B	27.48 ppb	1.60	25.00	90 - 110	
23 Na	24150.00 ppb	0.56	25000.00	90 - 110	
24 Mg	23050.00 ppb	0.61	25000.00	90 - 110	
27 Al	23040.00 ppb	0.87	25000.00	90 - 110	
28 Si	2409.00 ppb	0.96	2500.00	90 - 110	
31 P	234.10 ppb	0.84	250.00	90 - 110	
39 K	24770.00 ppb	1.45	25000.00	90 - 110	
40 Ca	25340.00 ppb	0.45	25000.00	90 - 110	
47 Ti	249.80 ppb	0.79	250.00	90 - 110	
51 V	247.60 ppb	1.06	250.00	90 - 110	
52 Cr	243.80 ppb	0.83	250.00	90 - 110	
55 Mn	1554.00 ppb	1.16	1500.00	90 - 110	
56 Fe	26270.00 ppb	0.73	25000.00	90 - 110	
59 Co	255.20 ppb	0.94	250.00	90 - 110	
60 Ni	251.40 ppb	0.45	250.00	90 - 110	
63 Cu	252.70 ppb	2.34	250.00	90 - 110	
66 Zn	244.20 ppb	0.95	250.00	90 - 110	
75 As	249.70 ppb	0.32	250.00	90 - 110	
78 Se	250.10 ppb	0.39	250.00	90 - 110	
88 Sr	242.20 ppb	1.83	250.00	90 - 110	
90 Zr	21.02 ppb	1.64	25.00	90 - 110	Fail
95 Mo	249.90 ppb	0.37	250.00	90 - 110	
107 Ag	24.74 ppb	0.88	25.00	90 - 110	
111 Cd	243.40 ppb	0.51	250.00	90 - 110	
118 Sn	247.40 ppb	0.37	250.00	90 - 110	
121 Sb	245.00 ppb	0.18	250.00	90 - 110	
137 Ba	492.60 ppb	0.49	500.00	90 - 110	
182 W	25.05 ppb	0.93	25.00	90 - 110	
205 Tl	229.50 ppb	1.56	250.00	90 - 110	
208 Pb	268.40 ppb	1.04	250.00	90 - 110	
235 U	1.54 ppb	0.70	1.80	90 - 110	Fail
238 U	249.30 ppb	0.66	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1642096.80	1.22	2039384.80	80.5	60 - 125	
45 Sc	1299279.40	1.85	1257122.80	103.4	60 - 125	
45 Sc	299730.13	1.36	288745.31	103.8	60 - 125	
45 Sc	2691832.30	0.64	2644089.80	101.8	60 - 125	
72 Ge	328261.53	0.81	317440.69	103.4	60 - 125	
72 Ge	148107.53	0.15	141011.13	105.0	60 - 125	
72 Ge	604286.44	0.60	577121.00	104.7	60 - 125	
115 In	4331901.00	0.20	4208195.00	102.9	60 - 125	
159 Tb	7542185.00	0.70	6955865.50	108.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10017.D\F6B10017.D#
Date Acquired:	Feb 23 2016 04:20 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0238	ppb	102238.5	439.78	0.20	
9 Be	0.0082	ppb	73.3	18.00	0.10	
11 B	-0.0735	ppb	3149.3	40.35	5.00	
23 Na	-20.3800	ppb	143801.8	5.10	40.00	
24 Mg	0.9394	ppb	29742.8	16.76	10.00	
27 Al	0.8127	ppb	23484.0	19.61	20.00	
28 Si	0.8641	ppb	4081.8	34.44	20.00	
31 P	-8.6740	ppb	19567.2	0.91	10.00	
39 K	-7.1330	ppb	55330.2	21.35	20.00	
40 Ca	2.5640	ppb	77374.8	17.93	25.00	
47 Ti	0.0422	ppb	143.3	33.05	0.50	
51 V	-0.0677	ppb	2516.2	6.47	0.50	
52 Cr	-0.0102	ppb	675.6	9.16	0.20	
55 Mn	0.0464	ppb	4786.5	32.19	0.20	
56 Fe	7.7880	ppb	96354.0	10.06	10.00	
59 Co	0.0034	ppb	543.4	39.61	0.20	
60 Ni	0.1369	ppb	573.3	7.08	0.20	
63 Cu	0.0344	ppb	417.1	9.67	0.40	
66 Zn	-0.0139	ppb	1162.3	164.63	2.00	
75 As	0.0189	ppb	95.8	23.77	0.20	
78 Se	0.0631	ppb	32.2	10.22	0.20	
88 Sr	0.0053	ppb	853.4	28.20	0.20	
90 Zr	-0.0134	ppb	347.8	11.32	2.00	
95 Mo	0.2873	ppb	2018.0	10.54	0.40	
107 Ag	0.0002	ppb	82.2	261.89	0.20	
111 Cd	0.0098	ppb	57.3	13.13	0.20	
118 Sn	0.0932	ppb	1321.2	8.14	0.20	
121 Sb	0.0466	ppb	1743.5	24.29	0.40	
137 Ba	0.0154	ppb	253.3	66.88	0.20	
182 W	0.0156	ppb	573.4	33.56	1.00	
205 Tl	0.0289	ppb	1525.7	11.67	0.20	
208 Pb	0.0097	ppb	1633.4	38.43	0.10	
235 U	0.0001	ppb	18.9	54.26	1.00	
238 U	0.0289	ppb	1975.8	15.40	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1614622.0	1.40	2039384.80	79.2	60 - 125	
45 Sc	1212208.9	2.63	1257122.80	96.4	60 - 125	
45 Sc	286888.8	0.96	288745.31	99.4	60 - 125	
45 Sc	2575941.3	0.54	2644089.80	97.4	60 - 125	
72 Ge	323467.5	1.10	317440.69	101.9	60 - 125	
72 Ge	144170.0	0.42	141011.13	102.2	60 - 125	
72 Ge	582317.9	0.95	577121.00	100.9	60 - 125	
115 In	4391574.0	0.85	4208195.00	104.4	60 - 125	
159 Tb	7298585.5	1.07	6955865.50	104.9	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10110.D\F6B10110.D#
Date Acquired:	Feb 23 2016 11:30 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	IMB025WB
Misc Info:	
Vial Number:	2403
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	MBW
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0069	ppb	115801.8	795.21	1.00	
9 Be	0.0104	ppb	96.7	13.85	0.50	
11 B	9.2800	ppb	45080.2	5.94	5.00	Fail
23 Na	-16.4200	ppb	148412.8	1.41	50.00	
24 Mg	1.4230	ppb	34342.6	5.06	50.00	
27 Al	1.4170	ppb	32211.6	1.18	50.00	
28 Si	1.9260	ppb	5018.8	8.84	25.00	
31 P	-1.3070	ppb	24618.9	58.12	25.00	
39 K	4.1320	ppb	58287.1	42.84	50.00	
40 Ca	1.1400	ppb	62755.8	13.96	50.00	
47 Ti	0.0403	ppb	132.2	33.13	1.00	
51 V	0.0112	ppb	2660.7	121.93	0.50	
52 Cr	-0.0308	ppb	500.0	6.76	0.50	
55 Mn	0.0769	ppb	5281.1	14.64	0.50	
56 Fe	1.8130	ppb	34932.6	1.66	50.00	
59 Co	0.0041	ppb	525.6	32.06	0.50	
60 Ni	0.2557	ppb	730.9	10.72	0.50	
63 Cu	0.0348	ppb	381.8	13.76	0.50	
66 Zn	0.0858	ppb	1404.6	8.67	10.00	
75 As	0.0135	ppb	82.2	68.52	0.50	
78 Se	0.0104	ppb	8.9	50.67	0.50	
88 Sr	0.0100	ppb	936.7	27.19	1.00	
90 Zr	-0.0157	ppb	265.6	12.38	2.50	
95 Mo	0.0467	ppb	357.8	18.10	1.00	
107 Ag	-0.0002	ppb	66.7	393.32	0.50	
111 Cd	0.0054	ppb	35.1	102.09	0.50	
118 Sn	0.0250	ppb	472.2	9.95	0.50	
121 Sb	-0.0005	ppb	890.1	848.26	0.50	
137 Ba	0.0291	ppb	300.0	22.50	0.50	
182 W	-0.0005	ppb	233.3	570.53	1.00	
205 Tl	0.0043	ppb	448.9	26.35	0.50	
208 Pb	-0.0011	ppb	962.3	101.45	0.50	
235 U	0.0000	ppb	8.9	1746.40	---	
238 U	0.0061	ppb	466.7	20.60	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1838072.9	2.46	2039384.80	90.1	60 - 125	
45 Sc	1130458.8	0.49	1257122.80	89.9	60 - 125	
45 Sc	261326.1	0.84	288745.31	90.5	60 - 125	
45 Sc	2430072.0	0.97	2644089.80	91.9	60 - 125	
72 Ge	288605.9	1.15	317440.69	90.9	60 - 125	
72 Ge	130132.5	1.40	141011.13	92.3	60 - 125	
72 Ge	536968.9	0.56	577121.00	93.0	60 - 125	
115 In	3903692.8	0.59	4208195.00	92.8	60 - 125	
159 Tb	6450865.5	1.39	6955865.50	92.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File: C:\DATA\IF62016\B\IF6B10.B\F6B10111.D\F6B10111.D#
Date Acquired: Feb 23 2016 11:34 pm
Operator: CCapul
Sample Name: IMB025WL
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 23 2016 03:44 pm
Sample Type: LCS
Final Dil Factor: 1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	671795.50	28.88	ppb	1.17	30.00	80 - 120	
9 Be	175909.80	28.15	ppb	0.32	30.00	80 - 120	
11 B	163002.41	35.42	ppb	0.66	30.00	80 - 120	
23 Na	11509470.00	3119.00	ppb	0.45	3000.00	80 - 120	
24 Mg	39683848.00	2958.00	ppb	0.27	3000.00	80 - 120	
27 Al	49569128.00	2883.00	ppb	0.85	3000.00	80 - 120	
28 Si	7464.40	4.03	ppb	6.60	3000.00	80 - 120	Fail
31 P	25209.23	-1.53	ppb	42.70	300.00	80 - 120	Fail
39 K	2251889.00	3129.00	ppb	1.66	3000.00	80 - 120	
40 Ca	21426230.00	3202.00	ppb	0.76	3000.00	80 - 120	
47 Ti	49982.95	29.83	ppb	1.63	30.00	80 - 120	
51 V	143803.30	30.11	ppb	1.26	30.00	80 - 120	
52 Cr	166294.00	29.47	ppb	0.65	30.00	80 - 120	
55 Mn	847564.81	32.59	ppb	1.44	30.00	80 - 120	
56 Fe	29947380.00	3228.00	ppb	0.61	3000.00	80 - 120	
59 Co	652240.31	30.78	ppb	0.48	30.00	80 - 120	
60 Ni	56531.10	31.90	ppb	1.19	30.00	80 - 120	
63 Cu	142795.41	31.53	ppb	0.74	30.00	80 - 120	
66 Zn	210422.50	62.97	ppb	1.05	60.00	80 - 120	
75 As	22948.88	29.52	ppb	1.44	30.00	80 - 120	
78 Se	11366.99	30.01	ppb	0.89	30.00	80 - 120	
88 Sr	957051.69	30.42	ppb	0.90	30.00	80 - 120	
90 Zr	5404.56	0.20	ppb	5.60	20.00	80 - 120	Fail
95 Mo	173799.30	28.84	ppb	2.09	30.00	80 - 120	
107 Ag	478829.09	28.31	ppb	0.87	30.00	80 - 120	
111 Cd	109098.10	29.86	ppb	0.10	30.00	80 - 120	
118 Sn	306015.59	29.40	ppb	0.59	30.00	80 - 120	
121 Sb	411149.69	28.99	ppb	0.43	30.00	80 - 120	
137 Ba	163488.30	29.70	ppb	0.50	30.00	80 - 120	
182 W	328.91	0.00	ppb	18.18	30.00	80 - 120	Fail
205 Tl	1109316.00	29.63	ppb	1.26	30.00	80 - 120	
208 Pb	1591334.00	34.67	ppb	0.86	30.00	80 - 120	
235 U	12311.96	0.22	ppb	2.10	0.21	80 - 120	
238 U	1748581.00	30.49	ppb	0.57	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1858754.40	0.36	2039384.80	91.1	60 - 125	
45 Sc	1137965.50	0.91	1257122.80	90.5	60 - 125	
45 Sc	262019.61	0.86	288745.31	90.7	60 - 125	
45 Sc	2507283.50	0.55	2644089.80	94.8	60 - 125	
72 Ge	289691.16	0.42	317440.69	91.3	60 - 125	
72 Ge	128330.36	1.22	141011.13	91.0	60 - 125	
72 Ge	534893.44	0.53	577121.00	92.7	60 - 125	
115 In	3937071.30	0.90	4208195.00	93.6	60 - 125	
159 Tb	6610760.50	0.32	6955865.50	95.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B10.B\F6B10112.D\F6B10112.D#
Date Acquired: Feb 23 2016 11:38 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B094-03M
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 23 2016 03:44 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	1294356.0	0.0000	70.6400	ppb	1.66	50.00	>LRS
9 Be	# 3	6	163747.7	0.0000	29.8300	ppb	1.37	50.00	
11 B	# 3	6	453153.0	0.0000	114.0000	ppb	1.07	50.00	>LRS
23 Na	# 1	45	479443900.0	0.0000	126300.0000	ppb	1.36	50000.00	>LRS
24 Mg	# 3	45	87866160.0	0.0000	6084.0000	ppb	0.56	50000.00	
27 Al	# 3	45	188213100.0	0.0000	10170.0000	ppb	0.75	50000.00	
28 Si	# 1	45	33986288.0	0.0000	28300.0000	ppb	1.28	5000.00	>LRS
31 P	# 3	45	255985.1	0.0000	244.7000	ppb	0.62	500.00	
39 K	# 2	45	16472940.0	0.0000	23830.0000	ppb	0.70	50000.00	
40 Ca	# 1	45	601493500.0	0.0000	86040.0000	ppb	2.30	50000.00	>LRS
47 Ti	# 3	45	231235.8	0.0000	128.3000	ppb	0.14	500.00	
51 V	# 2	45	317356.9	0.0000	68.4200	ppb	0.46	500.00	
52 Cr	# 2	45	463818.7	0.0000	84.0000	ppb	0.80	500.00	
55 Mn	# 3	45	5594626.0	0.0000	200.5000	ppb	1.00	3000.00	
56 Fe	# 1	45	139190400.0	0.0000	14330.0000	ppb	0.46	50000.00	
59 Co	# 3	45	671651.8	0.0000	29.4400	ppb	1.54	500.00	
60 Ni	# 2	45	74782.3	0.0000	43.0600	ppb	0.70	500.00	
63 Cu	# 2	45	291130.0	0.0000	65.5600	ppb	0.16	500.00	
66 Zn	# 3	72	875120.3	0.0000	278.9000	ppb	1.23	500.00	
75 As	# 2	72	27868.6	0.0000	37.7300	ppb	0.72	500.00	
78 Se	# 1	72	16319.8	0.0000	46.1700	ppb	4.36	500.00	
88 Sr	# 3	72	10142000.0	0.0000	342.1000	ppb	0.65	500.00	
90 Zr	# 3	72	201382.3	0.0000	8.9510	ppb	0.53	50.00	
95 Mo	# 3	115	406335.0	0.0000	74.0600	ppb	0.46	500.00	
107 Ag	# 3	115	410387.0	0.0000	26.6500	ppb	1.12	50.00	
111 Cd	# 3	115	99989.9	0.0000	30.0600	ppb	1.58	500.00	
118 Sn	# 3	115	275971.6	0.0000	29.1200	ppb	0.38	500.00	
121 Sb	# 3	115	232843.7	0.0000	18.0100	ppb	0.58	500.00	
137 Ba	# 3	115	834118.8	0.0000	166.6000	ppb	0.63	1000.00	
182 W	# 3	159	7894.8	0.0000	0.4672	ppb	1.85	50.00	
205 Tl	# 3	159	1007373.0	0.0000	28.6300	ppb	0.57	500.00	
208 Pb	# 3	159	1833989.0	0.0000	42.5200	ppb	1.58	500.00	
235 U	# 3	159	11745.8	0.0000	0.2255	ppb	6.08	30.00	
238 U	# 3	159	1643358.0	0.0000	30.4800	ppb	1.45	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1632579.10	1.11	2039384.80	80.1	60 - 125	
45 Sc # 1	1191926.50	0.77	1257122.80	94.8	60 - 125	
45 Sc # 2	257094.11	0.52	288745.31	89.0	60 - 125	
45 Sc # 3	2699274.30	0.57	2644089.80	102.1	60 - 125	
72 Ge # 1	270461.63	1.13	317440.69	85.2	60 - 125	
72 Ge # 2	121997.94	0.61	141011.13	86.5	60 - 125	
72 Ge # 3	504297.38	1.10	577121.00	87.4	60 - 125	
115 In # 3	3584770.80	0.27	4208195.00	85.2	60 - 125	
159 Tb # 3	6213780.50	0.34	6955865.50	89.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

5 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62016\B\IF6B10.B\F6B10113.D\F6B10113.D#
Date Acquired: Feb 23 2016 11:42 pm
Acq. Method: EMX6020H.M
Operator: CCapul
Sample Name: B094-03A
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update: Feb 23 2016 03:44 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	1244778.0	0.0000	68.3200	ppb	1.57	50.00	>LRS
9 Be	# 3	6	166927.2	0.0000	30.6700	ppb	1.22	50.00	
11 B	# 3	6	441563.3	0.0000	112.0000	ppb	1.62	50.00	>LRS
23 Na	# 1	45	442640290.0	0.0000	123100.0000	ppb	1.18	50000.00	>LRS
24 Mg	# 3	45	87215888.0	0.0000	6322.0000	ppb	1.33	50000.00	
27 Al	# 3	45	152736990.0	0.0000	8638.0000	ppb	0.64	50000.00	
28 Si	# 1	45	26463700.0	0.0000	23280.0000	ppb	1.73	5000.00	>LRS
31 P	# 3	45	231442.4	0.0000	230.0000	ppb	0.90	500.00	
39 K	# 2	45	15511180.0	0.0000	23120.0000	ppb	0.95	50000.00	
40 Ca	# 1	45	552001280.0	0.0000	83390.0000	ppb	2.04	50000.00	>LRS
47 Ti	# 3	45	188861.1	0.0000	109.7000	ppb	0.93	500.00	
51 V	# 2	45	300135.4	0.0000	66.6400	ppb	0.85	500.00	
52 Cr	# 2	45	427306.6	0.0000	79.7100	ppb	0.61	500.00	
55 Mn	# 3	45	5154835.0	0.0000	193.4000	ppb	1.51	3000.00	
56 Fe	# 1	45	117412800.0	0.0000	12770.0000	ppb	1.57	50000.00	
59 Co	# 3	45	665695.6	0.0000	30.5400	ppb	1.07	500.00	
60 Ni	# 2	45	72500.8	0.0000	43.0000	ppb	0.92	500.00	
63 Cu	# 2	45	278348.1	0.0000	64.5700	ppb	1.24	500.00	
66 Zn	# 3	72	828843.8	0.0000	272.0000	ppb	0.83	500.00	
75 As	# 2	72	27599.7	0.0000	38.5200	ppb	0.93	500.00	
78 Se	# 1	72	16095.1	0.0000	46.9800	ppb	0.68	500.00	
88 Sr	# 3	72	9526778.0	0.0000	330.9000	ppb	0.37	500.00	
90 Zr	# 3	72	168253.6	0.0000	7.6990	ppb	2.41	50.00	
95 Mo	# 3	115	393896.7	0.0000	72.4900	ppb	1.08	500.00	
107 Ag	# 3	115	383656.3	0.0000	25.1500	ppb	0.28	50.00	
111 Cd	# 3	115	101230.7	0.0000	30.7300	ppb	0.99	500.00	
118 Sn	# 3	115	312330.5	0.0000	33.2800	ppb	0.19	500.00	
121 Sb	# 3	115	381864.9	0.0000	29.8600	ppb	1.01	500.00	
137 Ba	# 3	115	739551.5	0.0000	149.1000	ppb	0.25	1000.00	
182 W	# 3	159	6726.4	0.0000	0.4033	ppb	3.27	50.00	
205 Tl	# 3	159	1002032.0	0.0000	28.9800	ppb	2.15	500.00	
208 Pb	# 3	159	1837326.0	0.0000	43.3500	ppb	0.81	500.00	
235 U	# 3	159	12061.6	0.0000	0.2356	ppb	1.11	30.00	
238 U	# 3	159	1687788.0	0.0000	31.8600	ppb	1.59	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1619000.80	1.98	2039384.80	79.4	60 - 125	
45 Sc # 1	1128519.30	1.25	1257122.80	89.8	60 - 125	
45 Sc # 2	249585.75	0.53	288745.31	86.4	60 - 125	
45 Sc # 3	2578737.80	1.25	2644089.80	97.5	60 - 125	
72 Ge # 1	262051.92	1.90	317440.69	82.6	60 - 125	
72 Ge # 2	118343.50	0.46	141011.13	83.9	60 - 125	
72 Ge # 3	489754.94	1.55	577121.00	84.9	60 - 125	
115 In # 3	3550345.00	0.31	4208195.00	84.4	60 - 125	
159 Tb # 3	6105791.50	1.02	6955865.50	87.8	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

5 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

STG

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10114.D\F6B10114.D#
Date Acquired:	Feb 23 2016 11:47 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B094-03
Misc Info:	
Vial Number:	2407
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	747857.0	0.0000	38.3500	ppb	1.86	50.00	
9 Be	# 3	6	2351.4	0.0000	0.4244	ppb	1.56	50.00	
11 B	# 3	6	324279.5	0.0000	81.5500	ppb	0.69	50.00	>LRS
23 Na	# 1	45	429074820.0	0.0000	119600.0000	ppb	1.15	50000.00	>LRS
24 Mg	# 3	45	45211768.0	0.0000	3245.0000	ppb	0.36	50000.00	
27 Al	# 3	45	99719880.0	0.0000	5585.0000	ppb	0.22	50000.00	
28 Si	# 1	45	25809390.0	0.0000	22760.0000	ppb	1.53	5000.00	>LRS
31 P	# 3	45	235572.7	0.0000	232.1000	ppb	0.41	500.00	
39 K	# 2	45	12954830.0	0.0000	19580.0000	ppb	1.02	50000.00	
40 Ca	# 1	45	517888290.0	0.0000	78410.0000	ppb	0.90	50000.00	>LRS
47 Ti	# 3	45	144883.3	0.0000	83.3400	ppb	1.17	500.00	
51 V	# 2	45	164128.6	0.0000	36.7500	ppb	1.98	500.00	
52 Cr	# 2	45	269252.2	0.0000	50.9500	ppb	1.24	500.00	
55 Mn	# 3	45	4377670.0	0.0000	162.6000	ppb	0.52	3000.00	
56 Fe	# 1	45	86722832.0	0.0000	9451.0000	ppb	1.10	50000.00	
59 Co	# 3	45	69054.0	0.0000	3.1190	ppb	1.07	500.00	
60 Ni	# 2	45	21900.3	0.0000	13.0700	ppb	1.77	500.00	
63 Cu	# 2	45	151562.4	0.0000	35.6700	ppb	2.06	500.00	
66 Zn	# 3	72	647883.0	0.0000	209.1000	ppb	0.32	500.00	
75 As	# 2	72	2986.8	0.0000	4.1410	ppb	0.69	500.00	
78 Se	# 1	72	3558.2	0.0000	10.7000	ppb	2.39	500.00	
88 Sr	# 3	72	8793401.0	0.0000	300.6000	ppb	0.99	500.00	
90 Zr	# 3	72	167714.2	0.0000	7.5500	ppb	0.82	50.00	
95 Mo	# 3	115	231115.7	0.0000	42.5900	ppb	1.25	500.00	
107 Ag	# 3	115	1042.3	0.0000	0.0643	ppb	3.68	50.00	
111 Cd	# 3	115	1441.4	0.0000	0.4340	ppb	13.14	500.00	
118 Sn	# 3	115	27068.1	0.0000	2.8690	ppb	0.65	500.00	
121 Sb	# 3	115	8349.5	0.0000	0.5913	ppb	2.85	500.00	
137 Ba	# 3	115	600780.7	0.0000	121.3000	ppb	0.65	1000.00	
182 W	# 3	159	6888.7	0.0000	0.4044	ppb	0.80	50.00	
205 Tl	# 3	159	2734.8	0.0000	0.0695	ppb	5.56	500.00	
208 Pb	# 3	159	426135.3	0.0000	9.8270	ppb	0.19	500.00	
235 U	# 3	159	182.2	0.0000	0.0033	ppb	10.67	30.00	
238 U	# 3	159	24851.4	0.0000	0.4571	ppb	1.57	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1628247.60	0.67	2039384.80	79.8	60 - 125	
45 Sc # 1	1126053.40	1.66	1257122.80	89.6	60 - 125	
45 Sc # 2	245891.89	1.52	288745.31	85.2	60 - 125	
45 Sc # 3	2603455.00	0.65	2644089.80	98.5	60 - 125	
72 Ge # 1	254184.11	0.42	317440.69	80.1	60 - 125	
72 Ge # 2	116835.59	0.35	141011.13	82.9	60 - 125	
72 Ge # 3	497662.03	0.47	577121.00	86.2	60 - 125	
115 In # 3	3545493.80	0.64	4208195.00	84.3	60 - 125	
159 Tb # 3	6235955.50	0.43	6955865.50	89.7	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

971

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10115.D\F6B10115.D#
Date Acquired:	Feb 23 2016 11:51 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B094-03J
Misc Info:	
Vial Number:	2408
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	235014.6	0.0000	7.5190	ppb	0.96	50.00	
9 Be	# 3	6	592.3	0.0000	0.1002	ppb	10.80	50.00	
11 B	# 3	6	82969.3	0.0000	19.6900	ppb	2.33	50.00	
23 Na	# 1	45	85258464.0	0.0000	25640.0000	ppb	1.73	50000.00	
24 Mg	# 3	45	9119564.0	0.0000	726.7000	ppb	1.52	50000.00	
27 Al	# 3	45	19646790.0	0.0000	1223.0000	ppb	1.19	50000.00	
28 Si	# 1	45	5103390.0	0.0000	4859.0000	ppb	1.17	5000.00	
31 P	# 3	45	64317.3	0.0000	49.0200	ppb	1.65	500.00	
39 K	# 2	45	2624279.0	0.0000	4023.0000	ppb	1.07	50000.00	
40 Ca	# 1	45	103786600.0	0.0000	16970.0000	ppb	1.35	50000.00	
47 Ti	# 3	45	27818.8	0.0000	17.7500	ppb	1.40	500.00	
51 V	# 2	45	34507.6	0.0000	7.5180	ppb	0.98	500.00	
52 Cr	# 2	45	54101.0	0.0000	10.4500	ppb	0.16	500.00	
55 Mn	# 3	45	888242.6	0.0000	36.5800	ppb	1.67	3000.00	
56 Fe	# 1	45	17573990.0	0.0000	2068.0000	ppb	2.13	50000.00	
59 Co	# 3	45	14696.8	0.0000	0.7213	ppb	0.38	500.00	
60 Ni	# 2	45	5112.5	0.0000	3.0210	ppb	2.52	500.00	
63 Cu	# 2	45	31631.4	0.0000	7.6270	ppb	0.26	500.00	
66 Zn	# 3	72	132848.8	0.0000	42.5600	ppb	1.08	500.00	
75 As	# 2	72	639.4	0.0000	0.8070	ppb	1.10	500.00	
78 Se	# 1	72	656.5	0.0000	1.9220	ppb	2.12	500.00	
88 Sr	# 3	72	1787371.0	0.0000	60.9800	ppb	1.65	500.00	
90 Zr	# 3	72	33320.9	0.0000	1.4760	ppb	1.56	50.00	
95 Mo	# 3	115	45593.4	0.0000	8.1920	ppb	0.25	500.00	
107 Ag	# 3	115	398.9	0.0000	0.0214	ppb	7.41	50.00	
111 Cd	# 3	115	390.1	0.0000	0.1115	ppb	3.05	500.00	
118 Sn	# 3	115	5919.3	0.0000	0.5964	ppb	2.70	500.00	
121 Sb	# 3	115	2698.1	0.0000	0.1429	ppb	6.47	500.00	
137 Ba	# 3	115	121146.4	0.0000	23.8600	ppb	1.85	1000.00	
182 W	# 3	159	1455.7	0.0000	0.0745	ppb	6.30	50.00	
205 Tl	# 3	159	1400.1	0.0000	0.0318	ppb	6.92	500.00	
208 Pb	# 3	159	92034.9	0.0000	2.1100	ppb	0.70	500.00	
235 U	# 3	159	52.2	0.0000	0.0008	ppb	38.51	30.00	
238 U	# 3	159	6527.5	0.0000	0.1187	ppb	0.71	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1669586.40	1.42	2039384.80	81.9	60 - 125	
45 Sc # 1	1042396.60	2.65	1257122.80	82.9	60 - 125	
45 Sc # 2	238762.08	0.53	288745.31	82.7	60 - 125	
45 Sc # 3	2342369.00	1.16	2644089.80	88.6	60 - 125	
72 Ge # 1	259469.11	1.31	317440.69	81.7	60 - 125	
72 Ge # 2	117871.51	0.89	141011.13	83.6	60 - 125	
72 Ge # 3	498431.81	1.10	577121.00	86.4	60 - 125	
115 In # 3	3631368.80	1.63	4208195.00	86.3	60 - 125	
159 Tb # 3	6219043.50	0.54	6955865.50	89.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10116.D\F6B10116.D#
Date Acquired:	Feb 23 2016 11:55 pm
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	B094-03D
Misc Info:	
Vial Number:	2409
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	752219.7	0.0000	39.3000	ppb	1.14	50.00	
9 Be	# 3	6	2431.4	0.0000	0.4458	ppb	2.34	50.00	
11 B	# 3	6	318696.4	0.0000	81.3900	ppb	0.90	50.00	>LRS
23 Na	# 1	45	420867810.0	0.0000	117300.0000	ppb	0.73	50000.00	>LRS
24 Mg	# 3	45	47633952.0	0.0000	3410.0000	ppb	0.77	50000.00	
27 Al	# 3	45	121594600.0	0.0000	6792.0000	ppb	1.73	50000.00	
28 Si	# 1	45	28490740.0	0.0000	25110.0000	ppb	1.26	5000.00	>LRS
31 P	# 3	45	244103.2	0.0000	240.8000	ppb	0.67	500.00	
39 K	# 2	45	12908770.0	0.0000	19680.0000	ppb	0.85	50000.00	
40 Ca	# 1	45	512942400.0	0.0000	77650.0000	ppb	0.97	50000.00	>LRS
47 Ti	# 3	45	160148.5	0.0000	91.8600	ppb	1.41	500.00	
51 V	# 2	45	165828.6	0.0000	37.4400	ppb	0.10	500.00	
52 Cr	# 2	45	284036.8	0.0000	54.1900	ppb	0.29	500.00	
55 Mn	# 3	45	4581427.0	0.0000	169.7000	ppb	0.94	3000.00	
56 Fe	# 1	45	101401900.0	0.0000	11050.0000	ppb	1.01	50000.00	
59 Co	# 3	45	72985.3	0.0000	3.2880	ppb	2.25	500.00	
60 Ni	# 2	45	23193.1	0.0000	13.9700	ppb	0.18	500.00	
63 Cu	# 2	45	152752.8	0.0000	36.2400	ppb	0.68	500.00	
66 Zn	# 3	72	655845.9	0.0000	213.5000	ppb	1.30	500.00	
75 As	# 2	72	3070.6	0.0000	4.2570	ppb	2.03	500.00	
78 Se	# 1	72	3561.6	0.0000	10.7500	ppb	1.91	500.00	
88 Sr	# 3	72	8805978.0	0.0000	303.4000	ppb	0.86	500.00	
90 Zr	# 3	72	179414.3	0.0000	8.1440	ppb	2.30	50.00	
95 Mo	# 3	115	235568.5	0.0000	43.2400	ppb	1.20	500.00	
107 Ag	# 3	115	1132.3	0.0000	0.0699	ppb	2.46	50.00	
111 Cd	# 3	115	1501.2	0.0000	0.4504	ppb	1.94	500.00	
118 Sn	# 3	115	27320.8	0.0000	2.8860	ppb	2.54	500.00	
121 Sb	# 3	115	7746.9	0.0000	0.5416	ppb	0.59	500.00	
137 Ba	# 3	115	684024.8	0.0000	137.6000	ppb	1.71	1000.00	
182 W	# 3	159	6826.4	0.0000	0.4063	ppb	1.45	50.00	
205 Tl	# 3	159	3353.9	0.0000	0.0883	ppb	1.38	500.00	
208 Pb	# 3	159	473593.3	0.0000	11.0800	ppb	1.65	500.00	
235 U	# 3	159	182.2	0.0000	0.0034	ppb	8.76	30.00	
238 U	# 3	159	25557.4	0.0000	0.4766	ppb	1.74	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1603532.60	1.00	2039384.80	78.6	60 - 125	
45 Sc # 1	1126356.50	1.92	1257122.80	89.6	60 - 125	
45 Sc # 2	243876.95	0.56	288745.31	84.5	60 - 125	
45 Sc # 3	2610924.30	0.83	2644089.80	98.7	60 - 125	
72 Ge # 1	253280.67	1.33	317440.69	79.8	60 - 125	
72 Ge # 2	116924.50	0.49	141011.13	82.9	60 - 125	
72 Ge # 3	493670.50	0.68	577121.00	85.5	60 - 125	
115 In # 3	3558967.50	1.13	4208195.00	84.6	60 - 125	
159 Tb # 3	6151505.50	1.48	6955865.50	88.4	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File: C:\DATA\IF62016\B\IF6B10.B\F6B10119.D\F6B10119.D#
Date Acquired: Feb 24 2016 12:08 am
Operator: CCapul
Sample Name: CCV10
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File: C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal Update: Feb 23 2016 03:44 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.15 ppb	4.24	25.00	90 - 110	
9 Be	25.13 ppb	5.97	25.00	90 - 110	
11 B	28.30 ppb	6.39	25.00	90 - 110	Fail
23 Na	25440.00 ppb	0.75	25000.00	90 - 110	
24 Mg	24150.00 ppb	3.40	25000.00	90 - 110	
27 Al	23970.00 ppb	2.57	25000.00	90 - 110	
28 Si	2511.00 ppb	0.65	2500.00	90 - 110	
31 P	246.50 ppb	0.81	250.00	90 - 110	
39 K	25200.00 ppb	0.85	25000.00	90 - 110	
40 Ca	25550.00 ppb	0.40	25000.00	90 - 110	
47 Ti	247.20 ppb	1.40	250.00	90 - 110	
51 V	246.10 ppb	1.11	250.00	90 - 110	
52 Cr	242.40 ppb	1.84	250.00	90 - 110	
55 Mn	1513.00 ppb	3.89	1500.00	90 - 110	
56 Fe	25580.00 ppb	1.12	25000.00	90 - 110	
59 Co	225.40 ppb	4.76	250.00	90 - 110	
60 Ni	245.40 ppb	0.48	250.00	90 - 110	
63 Cu	235.40 ppb	0.80	250.00	90 - 110	
66 Zn	250.20 ppb	1.30	250.00	90 - 110	
75 As	247.40 ppb	1.09	250.00	90 - 110	
78 Se	250.90 ppb	0.59	250.00	90 - 110	
88 Sr	243.40 ppb	0.84	250.00	90 - 110	
90 Zr	20.87 ppb	3.46	25.00	90 - 110	Fail
95 Mo	247.80 ppb	1.07	250.00	90 - 110	
107 Ag	24.52 ppb	2.66	25.00	90 - 110	
111 Cd	252.30 ppb	1.23	250.00	90 - 110	
118 Sn	249.50 ppb	1.14	250.00	90 - 110	
121 Sb	249.30 ppb	1.23	250.00	90 - 110	
137 Ba	500.30 ppb	1.83	500.00	90 - 110	
182 W	24.90 ppb	2.64	25.00	90 - 110	
205 Tl	244.90 ppb	5.05	250.00	90 - 110	
208 Pb	259.80 ppb	4.02	250.00	90 - 110	
235 U	1.50 ppb	1.45	1.80	90 - 110	Fail
238 U	247.30 ppb	1.74	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1610924.50	2.73	2039384.80	79.0	60 - 125	
45 Sc	1050584.10	1.15	1257122.80	83.6	60 - 125	
45 Sc	236721.19	0.31	288745.31	82.0	60 - 125	
45 Sc	2322352.00	2.58	2644089.80	87.8	60 - 125	
72 Ge	260617.27	0.68	317440.69	82.1	60 - 125	
72 Ge	115414.73	1.09	141011.13	81.8	60 - 125	
72 Ge	489648.69	0.66	577121.00	84.8	60 - 125	
115 In	3482821.00	1.13	4208195.00	82.8	60 - 125	
159 Tb	6143980.00	2.04	6955865.50	88.3	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62016\B\IF6B10.B\F6B10120.D\F6B10120.D#
Date Acquired:	Feb 24 2016 12:12 am
Acq. Method:	EMX6020H.M
Operator:	CCapul
Sample Name:	CCB10
Misc Info:	
Vial Number:	1202
Current Method:	C:\ICPCHEM\1\METHODS\EMX6020H.M
Calibration File:	C:\DATA\IF62015\K\IF6K02.B\EMX6020H.C
Last Cal. Update:	Feb 23 2016 03:44 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0087	ppb	105987.2	1213.90	0.20	
9 Be	0.0129	ppb	102.2	1.66	0.10	
11 B	3.5150	ppb	17807.9	8.84	5.00	
23 Na	0.9366	ppb	195167.9	356.50	40.00	
24 Mg	2.3930	ppb	44072.3	16.04	10.00	
27 Al	2.0970	ppb	40879.7	12.64	20.00	
28 Si	3.2800	ppb	6070.3	13.63	20.00	
31 P	-0.6651	ppb	23612.5	74.28	10.00	
39 K	7.7480	ppb	55943.6	31.32	20.00	
40 Ca	18.8700	ppb	166808.9	15.32	25.00	
47 Ti	0.0215	ppb	95.6	77.84	0.50	
51 V	0.0970	ppb	2816.7	4.94	0.50	
52 Cr	0.0260	ppb	752.2	43.63	0.20	
55 Mn	0.1914	ppb	7654.5	11.58	0.20	
56 Fe	26.3900	ppb	241723.5	15.43	10.00	Fail
59 Co	0.0226	ppb	851.2	26.42	0.20	
60 Ni	0.3284	ppb	790.0	10.33	0.20	Fail
63 Cu	0.0595	ppb	453.6	17.86	0.40	
66 Zn	-0.0146	ppb	1002.3	58.97	2.00	
75 As	0.1026	ppb	138.9	14.08	0.20	
78 Se	0.2795	ppb	102.0	14.98	0.20	~~Fail~~ CWD
88 Sr	0.0181	ppb	1115.6	10.94	0.20	cw
90 Zr	0.0152	ppb	941.2	27.22	2.00	2/24/16
95 Mo	0.2055	ppb	1243.4	13.94	0.40	
107 Ag	0.0014	ppb	88.9	34.69	0.20	
111 Cd	0.0149	ppb	66.2	7.26	0.20	
118 Sn	0.1224	ppb	1406.8	8.86	0.20	
121 Sb	0.0622	ppb	1685.7	26.09	0.40	
137 Ba	0.0391	ppb	337.8	26.97	0.20	
182 W	0.0239	ppb	628.9	16.76	1.00	
205 Tl	0.0543	ppb	2208.1	13.03	0.20	
208 Pb	0.0156	ppb	1657.9	44.28	0.10	
235 U	0.0003	ppb	26.7	66.70	1.00	
238 U	0.0401	ppb	2301.4	18.52	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1678209.1	2.43	2039384.80	82.3	60 - 125	
45 Sc	1046382.6	0.77	1257122.80	83.2	60 - 125	
45 Sc	240377.3	0.63	288745.31	83.2	60 - 125	
45 Sc	2280603.0	0.28	2644089.80	86.3	60 - 125	
72 Ge	266848.9	0.74	317440.69	84.1	60 - 125	
72 Ge	118757.4	1.16	141011.13	84.2	60 - 125	
72 Ge	503191.0	0.36	577121.00	87.2	60 - 125	
115 In	3719515.8	1.02	4208195.00	88.4	60 - 125	
159 Tb	6260139.5	0.75	6955865.50	90.0	60 - 125	

ISTD Ref File : C:\DATA\IF62016\B\IF6B10.B\F6B10004.D\F6B10004.D#

3 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # VC-15-014-1

all the samples are pH <2

Book #: EIM-057
Batch: IMB025W
Matrix: Water
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	90.8 °C		92.8 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-02-29	0.15
LCS-2	SM6A-007-02-30	0.15
MS	same spike soln & vol as LCS 1 & 2	
Blank Soil (Bead)	NA	NA
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-005-14-09	0.5 + 1.0
HCl	SWIA-005-12-08	0.25 + 0.25
H_2O_2	NA	NA
HNO_3(1:1)	NA	NA
pH Strip (0-14)	HC573149	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A-03-02-07
☑ Thermometer ID:	101993366 / E2
☑ Pipette ID:	239360318
☐ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: SP
Standard Added By: SP Witnessed By: [illegible]
Extract Rcvd By: [illegible] Checked By: [illegible]

STG

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IMB025W01	IMB025WB	50	ml	2/17/16 10:34	50	50	50	1	
16IMB025W02	IMB025WL	50	ml	2/17/16 10:34	50	50	50	1	
16IMB025W03	B094-03	50	ml	2/17/16 10:34	50	50	50	1	
16IMB025W04	B094-03M	50	ml	2/17/16 10:34	50	50	50	1	
16IMB025W05	B094-03D	50	ml	2/17/16 10:34	50	50	50	1	

SP 2/17/16

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 2/17/16 11:22

☑ Digestion Ended @ 2/17/16 14:10

Comments:

Prepared By: SPara

Checked By: CW

Date 2/17/16

TCLP METALS

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	02/10/16 10:51
Project	: CANNON AFB PBR	Date Received:	02/11/16
SDG NO.	: 16B094	Date Extracted:	02/25/16 11:30
Sample ID:	CAFB-IDW-S-022016	Date Analyzed:	02/29/16 14:34
Lab Samp ID:	B094-02R	Dilution Factor:	5
Lab File ID:	ID8B028038	Matrix :	LEACHATE
Ext Btch ID:	IPB034W	% Moisture :	NA
Calib. Ref.:	ID8B028033	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	0.0306J	0.0500	0.0150	0.0250
Barium	1.26	0.0500	0.00500	0.0100
Cadmium	ND	0.0500	0.00500	0.0100
Chromium	0.0511	0.0500	0.00750	0.0150
Lead	0.0487J	0.0500	0.00850	0.0150
Selenium	0.0265J	0.0500	0.0125	0.0250
Silver	ND	0.0500	0.00750	0.0150

DateTime Leached: 02/16/16 17:30

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/25/16
SDG NO.	: 16B094	Date Extracted:	02/25/16 11:30
Sample ID:	MBLK1W	Date Analyzed:	02/25/16 19:43
Lab Samp ID:	IPB034WB	Dilution Factor:	1
Lab File ID:	ID8B025036	Matrix :	WATER
Ext Btch ID:	IPB034W	% Moisture :	NA
Calib. Ref.:	ID8B025034	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	ND	0.0100	0.00300	0.00500
Barium	ND	0.0100	0.00100	0.00200
Cadmium	ND	0.0100	0.00100	0.00200
Chromium	ND	0.0100	0.00150	0.00300
Lead	ND	0.0100	0.00170	0.00300
Selenium	ND	0.0100	0.00250	0.00500
Silver	ND	0.0100	0.00150	0.00300

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	02/25/16
SDG NO.	: 16B094	Date Extracted:	02/25/16 11:30
Sample ID:	MBLK2W	Date Analyzed:	02/25/16 20:08
Lab Samp ID:	TXB005SB	Dilution Factor:	5
Lab File ID:	ID8B025044	Matrix :	LEACHATE
Ext Btch ID:	IPB034W	% Moisture :	NA
Calib. Ref.:	ID8B025042	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	ND	0.0500	0.0150	0.0250
Barium	0.00585J	0.0500	0.00500	0.0100
Cadmium	ND	0.0500	0.00500	0.0100
Chromium	ND	0.0500	0.00750	0.0150
Lead	ND	0.0500	0.00850	0.0150
Selenium	ND	0.0500	0.0125	0.0250
Silver	ND	0.0500	0.00750	0.0150

DateTime Leached: 02/16/16 17:30

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW1311/3010A/6010C

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MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MBLK1W			
CONTROL NO.:	IPB034WB	IPB034WL		
LAB FILE ID:	ID8B025036	ID8B025037		
DATIME EXTRCTD:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	NA
DATIME ANALYZD:	02/25/1619:43	02/25/1619:46	DATE RECEIVED:	02/25/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B025034	ID8B025034		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Arsenic	ND	.5	.536	107	80-120
Barium	ND	.5	.507	101	80-120
Cadmium	ND	.5	.519	104	80-120
Chromium	ND	.5	.52	104	80-120
Lead	ND	.5	.513	103	80-120
Selenium	ND	.5	.55	110	80-120
Silver	ND	.5	.516	103	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW1311/3010A/6010C

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MATRIX:	LEACHATE		% MOISTURE:	NA
DILTN FACTR:	5	5		
SAMPLE ID:	CAFB-IDW-S-022016			
CONTROL NO.:	B094-02R	B094-02M		
LAB FILE ID:	ID8B028038	ID8B025049		
DATIME EXTRCTD:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATIME ANALYZD:	02/29/1614:34	02/25/1620:24	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B025042		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Arsenic	.0306J	2.5	2.8	111	80-120
Barium	1.26	2.5	4.19	117	80-120
Cadmium	ND	2.5	2.48	99	80-120
Chromium	.0511	2.5	2.61	102	80-120
Lead	.0487J	2.5	2.6	102	80-120
Selenium	.0265J	2.5	2.93	116	80-120
Silver	ND	2.5	2.65	106	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3010A/6010C

MATRIX:	LEACHATE		% MOISTURE:	NA
DILUTION FACTOR:	5	25		
SAMPLE ID:	CAFB-IDW-S-022016	CAFB-IDW-S-022016DL		
EMAX SAMP ID:	B094-02R	B094-02J		
LAB FILE ID:	ID8B028038	ID8B028039		
DATE EXTRACTED:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATE ANALYZED:	02/29/1614:34	02/29/1614:37	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B028033		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SERIAL DIL RSLT (mg/L)	DIF RSLT %	QC LIMIT (%)
Arsenic	0.0306J	ND	NA	10
Barium	1.26	1.28	2	10
Cadmium	ND	ND	0	10
Chromium	0.0511	0.0515J	NA	10
Lead	0.0487J	ND	NA	10
Selenium	0.0265J	ND	NA	10
Silver	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
SDG NO.: 16B094
METHOD: SW1311/3010A/6010C

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MATRIX:	LEACHATE		% MOISTURE:	NA
DILTN FACTR:	5	5		
SAMPLE ID:	CAFB-IDW-S-022016			
CONTROL NO.:	B094-02R	B094-02A		
LAB FILE ID:	ID8B028038	ID8B028037		
DATIME EXTRCTD:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATIME ANALYZD:	02/29/1614:34	02/29/1614:31	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B028033		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	AS RSLT (mg/L)	AS % REC	QC LIMIT (%)
Arsenic	.0306J	2.5	2.75	109	75-125
Barium	1.26	2.5	3.77	100	75-125
Cadmium	ND	2.5	2.52	101	75-125
Chromium	.0511	2.5	2.62	103	75-125
Lead	.0487J	2.5	2.55	100	75-125
Selenium	.0265J	2.5	2.85	113	75-125
Silver	ND	2.5	2.58	103	75-125

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16B094
METHOD: SW1311/3010A/6010C

MATRIX:	LEACHATE		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	CAFB-IDW-S-022016	CAFB-IDW-S-022016DUP		
EMAX SAMP ID:	B094-02R	B094-02D		
LAB FILE ID:	ID8B028038	ID8B028036		
DATE EXTRACTED:	02/25/1611:30	02/25/1611:30	DATE COLLECTED:	02/10/16 10:51
DATE ANALYZED:	02/29/1614:34	02/29/1614:21	DATE RECEIVED:	02/11/16
PREP. BATCH:	IPB034W	IPB034W		
CALIB. REF:	ID8B028033	ID8B028033		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Arsenic	0.0306J	0.0196J	20	20
Barium	1.26	1.22	3	20
Cadmium	ND	ND	0	20
Chromium	0.0511	0.0476J	7	20
Lead	0.0487J	0.0509	4	20
Selenium	0.0265J	0.0177J	4	20
Silver	ND	ND	0	20

ICP QC CHECK TABLE

QC	ICV	CCV	ICSAB	ICSA	MLCV
Limit%	90-110	90-110	80-120	80-120	80-120
Comp	mg/L	mg/L	mg/L	mg/L	mg\L
Al	100	100	400	400	200
Sb	1.5	1.5	1	0	5
As	1	1	1	0	1
Ba	2	2	0.5	0	5
Be	1.5	1.5	0.5	0	5
B	2.5	2.5	0.5	0	5
Cd	2	2	1	0	5
Ca	75	75	500	500	250
Cr	2.5	2.5	0.5	0	5
Co	1	1	0.5	0	1
Cu	2.5	2.5	0.5	0	5
Fe	25	25	200	200	200
Pb	2.5	2.5	1	0	5
Li	0.5	0.5	1	0	0.5
Mg	60	60	200	200	100
Mn	2.5	2.5	0.5	0	5
Mo	2.5	2.5	1	0	5
Ni	2.5	2.5	1	0	5
K	60	60	75	0	250
Se	1	1	1	0	1
Ag	0.5	0.5	1	0	0.5
Na	60	60	75	0	150
Sr	0.5	0.5	0.5	0	0.5
Tl	2.5	2.5	1	0	5
Sn	0.5	0.5	1	0	0.5
Ti	0.5	0.5	1	0	0.5
V	1.5	1.5	0.5	0	5
Zn	2.5	2.5	1	0	5

SEQUENCE FILE : ID8B025

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
ID8B025001	Blank	17:46	02/25/16	1.000
ID8B025002	S20	17:50	02/25/16	1.000
ID8B025003	S21	17:53	02/25/16	1.000
ID8B025004	S22	17:56	02/25/16	1.000
ID8B025005	S23	17:59	02/25/16	1.000
ID8B025006	S24	18:02	02/25/16	1.000
ID8B025007	S25	18:05	02/25/16	1.000
ID8B025008	S26	18:09	02/25/16	1.000
ID8B025009	S27	18:12	02/25/16	1.000
ID8B025010	S28	18:15	02/25/16	1.000
ID8B025011	S29	18:18	02/25/16	1.000
ID8B025012	S30	18:21	02/25/16	1.000
ID8B025013	S31	18:24	02/25/16	1.000
ID8B025014	ICV	18:27	02/25/16	1.000
ID8B025015	ICB	18:30	02/25/16	1.000
ID8B025016	MRLB2502	18:34	02/25/16	1.000
ID8B025017	MRLB2503	18:37	02/25/16	1.000
ID8B025018	ICSA1	18:40	02/25/16	1.000
ID8B025019	ICSAB1	18:43	02/25/16	1.000
ID8B025020	CCV1	18:46	02/25/16	1.000
ID8B025021	CCB1	18:49	02/25/16	1.000
ID8B025022	CCV2	19:01	02/25/16	1.000
ID8B025023	CCB2	19:04	02/25/16	1.000
ID8B025024	IPB032SB	19:07	02/25/16	1.000
ID8B025025	IPB032SL	19:10	02/25/16	1.000
ID8B025026	IPB032SC	19:13	02/25/16	1.000
ID8B025027	A205-25A	19:16	02/25/16	1.000
ID8B025028	A205-25	19:19	02/25/16	1.000
ID8B025029	A205-25J	19:22	02/25/16	5.000
ID8B025030	A205-25M	19:25	02/25/16	1.000
ID8B025031	A205-25S	19:28	02/25/16	1.000
ID8B025032	A205-12	19:31	02/25/16	1.000
ID8B025033	A205-13	19:34	02/25/16	1.000
ID8B025034	CCV3	19:37	02/25/16	1.000
ID8B025035	CCB3	19:40	02/25/16	1.000
ID8B025036	IPB034WB	19:43	02/25/16	1.000
ID8B025037	IPB034WL	19:46	02/25/16	1.000
ID8B025038	A205-24	19:49	02/25/16	1.000
ID8B025039	A179-04	19:52	02/25/16	1.000
ID8B025040	A179-05	19:55	02/25/16	1.000
ID8B025041	B859-01	19:58	02/25/16	1.000
ID8B025042	CCV4	20:02	02/25/16	1.000
ID8B025043	CCB4	20:05	02/25/16	1.000
ID8B025044	TXB005SB Tup	20:08	02/25/16	1.000
ID8B025045	B094-02A	20:11	02/25/16	1.000
ID8B025046	B094-02R	20:14	02/25/16	1.000
ID8B025047	B094-02J	20:17	02/25/16	5.000
ID8B025048	B094-02D	20:20	02/25/16	1.000
ID8B025049	B094-02M	20:24	02/25/16	1.000
ID8B025050	Blank	20:26	02/25/16	1.000
ID8B025051	MRLB2504	20:30	02/25/16	1.000

ID8B025052	MRLB2505	20:33	02/25/16	1.000
ID8B025053	CCV5	20:36	02/25/16	1.000
ID8B025054	CCB5	20:39	02/25/16	1.000
ID8B025055	B115-01	20:42	02/25/16	1.000
ID8B025056	B115-02	20:45	02/25/16	1.000
ID8B025057	B115-05	20:48	02/25/16	1.000
ID8B025058	B115-06	20:51	02/25/16	1.000
ID8B025059	B115-10	20:54	02/25/16	1.000
ID8B025060	B115-11	20:57	02/25/16	1.000
ID8B025061	B115-14	21:00	02/25/16	1.000
ID8B025062	B115-15	21:03	02/25/16	1.000
ID8B025063	B115-18	21:06	02/25/16	1.000
ID8B025064	B115-19	21:09	02/25/16	1.000
ID8B025065	CCV6	21:12	02/25/16	1.000
ID8B025066	CCB6	21:15	02/25/16	1.000
ID8B025067	IPB031SB	21:18	02/25/16	1.000
ID8B025068	IPB031SL	21:21	02/25/16	1.000
ID8B025069	IPB031SC	21:24	02/25/16	1.000
ID8B025070	B107-16A	21:27	02/25/16	1.000
ID8B025071	B107-16	21:30	02/25/16	1.000
ID8B025072	B107-16J	21:33	02/25/16	5.000
ID8B025073	B107-16M	21:36	02/25/16	1.000
ID8B025074	B107-16S	21:39	02/25/16	1.000
ID8B025075	B107-03	21:42	02/25/16	1.000
ID8B025076	B107-04	21:44	02/25/16	1.000
ID8B025077	CCV7	21:47	02/25/16	1.000
ID8B025078	CCB7	21:50	02/25/16	1.000
ID8B025079	B107-07	21:54	02/25/16	1.000
ID8B025080	B107-08	21:56	02/25/16	1.000
ID8B025081	B107-09	21:59	02/25/16	1.000
ID8B025082	B107-11	22:02	02/25/16	1.000
ID8B025083	B107-12	22:05	02/25/16	1.000
ID8B025084	B107-13	22:08	02/25/16	1.000
ID8B025085	B107-17	22:11	02/25/16	1.000
ID8B025086	CCV8	22:14	02/25/16	1.000
ID8B025087	CCB8	22:17	02/25/16	1.000
ID8B025088	B110-01	22:20	02/25/16	1.000
ID8B025089	B110-02	22:23	02/25/16	1.000
ID8B025090	B110-05	22:26	02/25/16	1.000
ID8B025091	B110-06	22:29	02/25/16	1.000
ID8B025092	B110-07	22:32	02/25/16	1.000
ID8B025093	B109-06N	22:35	02/25/16	1.000
ID8B025094	B109-06N	22:38	02/25/16	1.000
ID8B025095	CCV9	22:41	02/25/16	1.000
ID8B025096	CCB9	22:44	02/25/16	1.000

VERSON : 16A UNIT : % SUMMARY of ICV and CCV : ID8B025 DATE : 02/25/16 INST : EMAXTID8

ANALYTE	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S27	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S31	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	101	102	105	100	103	100	101	108	103	100	101	97	101	110	96	101	102	104	103	108	102	109	98	94	103	101	99	107
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2502	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2503	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA1	94	----	----	----	----	----	----	99	----	----	----	93	----	----	95	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSAB1	95	106	110	101	101	95	98	102	101	101	107	94	101	118	96	96	107	104	112	110	110	113	102	84	102	101	101	108
CCV1	106	104	108	104	105	103	103	109	105	101	103	98	102	111*	98	98	109	106	107	111*	104	110	103	94	106	103	103	111*
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	96	101	104	96	99	98	99	106	100	99	100	96	99	107	92	98	100	102	100	107	99	106	96	92	102	97	99	105
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB032SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB032SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB032SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	97	100	103	98	101	98	99	106	101	99	100	96	99	108	94	99	100	103	102	106	100	108	97	91	101	98	98	105
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB034WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB034WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A179-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A179-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B859-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	98	102	103	101	102	97	97	103	97	100	98	92	100	107	92	96	102	104	101	107	98	107	97	91	103	100	96	104
CCB4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TXB005SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2504	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

MRLB2505	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	97	101	103	99	100	97	96	104	98	100	99	93	100	107	91	97	102	104	100	107	98	106	97	91	103	98	97	104
CCB5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	99	101	100	99	102	96	95	105	97	99	96	93	100	106	94	96	103	103	100	104	97	106	95	90	103	100	96	104
CCB6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB031SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB031SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB031SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	99	100	101	99	101	97	96	105	99	99	99	93	100	107	93	97	102	103	101	105	98	107	97	90	102	99	96	103
CCB7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	99	101	102	99	101	97	96	106	98	99	98	94	100	106	93	97	102	103	101	105	98	106	96	91	103	99	97	104
CCB8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B109-06N	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B109-06N	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV9	104	102	105	101	102	100	99	107	102	101	101	96	101	108	95	94	109	106	105	107	101	108	100	90	107	101	101	110
CCB9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

VERSON : 16A UNIT : UG/L SUMMARY of CALIBRATION BLANKS : ID8B025 (WATER) DATE : 02/25/16 INST : EMAXTID8

ANALYTE	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S27	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S31	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	6.94	1.10	.320	.280	.160	4.52	.020	10.0	.310	.060	.080	-10.2	.540	.200	7.22	.610	.370	.330	103	1.21	.110	46.7	.100	1.02	-.020	.130	.210	-1.47
MRLB2502	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2503	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA1	----	7.77	.060	.550	.070	-26.0	.590	----	1.43	.570	1.09	----	.000	3.60	----	1.33	-.900	-.680	80.2	-.620	-.060	89.4	.010	-1.79	1.53	4.13	-.360	2.53
ICSAB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	82.8	1.09	.610	.770	.370	5.64	.450	85.3	.610	.280	.680	24.4	.530	1.000	31.1	.720	.880	.690	126	.530	.220	69.3	.140	.660	.450	.330	.600	-1.66
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	7.78	.310	.810	.240	.220	3.56	.100	44.0	.180	.240	.890	-8.01	.290	-.020	6.18	.510	.520	.500	103	-1.38	.160	57.0	.030	.640	-.060	-.160	.270	2.51
IPB032SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB032SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB032SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-25S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	17.2	.880	1.95	.670	.250	2.73	.190	29.3	.390	.220	.250	2.31	.460	.630	9.75	1.96	.660	.520	78.9	-.170	.170	23.8	-.010	.730	.700	-.070	.400	-1.44
IPB034WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB034WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A205-24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A179-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
A179-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B859-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB4	40.0	.870	-.530	.710	.560	3.89	.670	51.0	.940	.350	.870	-1.37	.860	1.02	25.0	1.03	1.21	1.02	102	-.490	.320	59.4	.150	1.70	.200	.310	.720	-.690
TXB005SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2504	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

MRLB2505	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB5	31.0	1.30	1.62	.640	.400	3.38	.470	41.1	.700	.250	1.56	-4.93	.810	.460	14.5	.900	1.04	.730	114	-.290	.270	117	.150	1.34	.190	.190	.640	-.720
B115-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B115-19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB6	16.2	1.24	1.83	.220	.280	2.67	.240	37.8	.360	.170	.580	-4.56	.630	.380	2.55	.800	.790	.450	71.8	-.670	.130	43.4	.110	.940	.130	.180	.290	-1.35
1PB031SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB031SL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB031SC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-16S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB7	24.4	1.47	-1.17	.480	.370	2.80	.330	46.2	.530	.050	.460	-3.25	.110	.380	16.8	.690	.880	.510	107	-1.01	.100	47.9	.120	1.67	-.410	.130	.430	-.350
B107-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-09	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B107-17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB8	19.8	.240	.570	.390	.300	2.37	.210	31.2	.470	.200	.420	-5.53	.430	1.09	11.5	.690	.820	.590	69.2	-.120	.070	33.3	.030	1.67	.040	-.280	.440	-1.22
B110-01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B110-07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B109-06N	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B109-06N	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB9	32.1	1.46	1.56	.620	.480	2.32	.400	27.2	.800	.220	.930	-3.68	.560	.530	9.20	.810	.920	.900	92.8	-.410	.320	37.5	.100	1.74	.220	.070	.710	-1.70

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/25/16 17:46

End Date: 2/25/16 22:44

SOP #	Rev. #
☑ EMAX-6010	7
☑ EMAX-6010C	1
☐ EMAX-200.7	4
☐ EMAX-	

Comments:

A205-12 Zn >UDR For dilution
A179-04 ↓ ↓

A205-13 } Fe >UDR. Fe interfering
A179-05 } element. For dilution

Book #: AD8-038

Instrument No.: D8

Analytical Batch: 1D8B025

Analytical Sequence: S-16B6010(V41)

Method File: 16B6010(V41)

Database: Emax21

Micropipette ID: ☑ 439340047

Micropipette ID: ☑ ICP-DOE4

Micropipette ID: ☑ 242780103

Micropipette ID: ☑ 439360087

Micropipette ID: ☐

	STANDARDS ID		STANDARDS ID
S0	SMIB016-76-04	S26	SMIB067504
S1	MA	S27	7601
S2	↓	S28	6305
S3	↓	S29	6106
S4	↓	S30	7303
S5	↓	S31	7304
S6	↓	ICV	7401
S7	↓	CCV	7605
S8	↓	ICSA	7602
S9	↓	ICSAB	7603
S10	↓	CRI/MRL	6905
S11	↓	CRI/MRL	↓ 7305
S12	↓	Internal Standard	SMIA093 0928
S16	↓	Post-Spike 1	↓ 0919
S17	↓	Post-Spike 2	↓ 0920
S18	↓	Post-Spike 3	↓ 0921
S20	SMIB016-6105		
S21	↓ 6601		
S22	↓ 7502		
S23	↓ 7503		
S24	↓ 6801		
S25	↓ 6802		

Analyzed By: TH

Date: 2/25/16

994

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Date File	Type	Anaylst	CorrFact	Check	Check Table	Fail Action
1	0	0	0	0	Unk	S0		ID8B025001		THuang	1	☒	unk	---
2	0	0	0	0	Unk	S20		ID8B025002		THuang	1	☒	unk	---
3	0	0	0	0	Unk	S21		ID8B025003		THuang	1	☒	unk	---
4	0	0	0	0	Unk	S22		ID8B025004		THuang	1	☒	unk	---
5	0	0	0	0	Unk	S23		ID8B025005		THuang	1	☒	unk	---
6	0	0	0	0	Unk	S24		ID8B025006		THuang	1	☒	unk	---
7	0	0	0	0	Unk	S25		ID8B025007		THuang	1	☒	unk	---
8	0	0	0	0	Unk	S26		ID8B025008		THuang	1	☒	unk	---
9	0	0	0	0	Unk	S27		ID8B025009		THuang	1	☒	unk	---
10	0	0	0	0	Unk	S28		ID8B025010		THuang	1	☒	unk	---
11	0	0	0	0	Unk	S29		ID8B025011		THuang	1	☒	unk	---
12	0	0	0	0	Unk	S30		ID8B025012		THuang	1	☒	unk	---
13	0	0	0	0	Unk	S31		ID8B025013		THuang	1	☒	unk	---
14	1	2	1	1	QC	ICV		ID8B025014		THuang	1	☒	CCV	None
15	2	2	2	1	QC	ICB		ID8B025015		THuang	1	☒	3XIDL	None
16	3	2	3	1	QC	MRLB2502		ID8B025016		THuang	1	☒	MRL-EMAX	None
17	4	2	4	1	QC	MRLB2503		ID8B025017		THuang	1	☒	MRL-AFCEE	None
18	5	2	5	1	QC	ICSA1		ID8B025018		THuang	1	☒	ICSA	None
19	6	2	6	1	QC	ICSAB1		ID8B025019		THuang	1	☒	ICSAB	None
20	7	2	7	1	QC	CCV1		ID8B025020		THuang	1	☒	CCV	None
21	8	2	8	1	QC	CCB1		ID8B025021		THuang	1	☒	3XIDL	None
22	82	3	10	2	QC	CCV2		ID8B025022		THuang	1	☒	CCV	None
23	83	3	11	2	QC	CCB2		ID8B025023		THuang	1	☒	3XIDL	None
24	9	2	9	1	QC	IPB032SB		ID8B025024		THuang	1	☒	1/2LOQ	None
25	10	2	10	1	QC	IPB032SL		ID8B025025		THuang	1	☒	LCS	None
26	11	2	11	1	QC	IPB032SC		ID8B025026		THuang	1	☒	LCS	None
27	12	2	12	1	Unk	A205-25A		ID8B025027		THuang	1	☒	unk	---
28	13	2	1	2	Unk	A205-25		ID8B025028		THuang	1	☒	unk	---
29	14	2	2	2	Unk	A205-25J		ID8B025029		THuang	1	☒	unk	---
30	15	2	3	2	Unk	A205-25M		ID8B025030		THuang	1	☒	unk	---
31	16	2	4	2	Unk	A205-25S		ID8B025031		THuang	1	☒	unk	---
32	17	2	5	2	Unk	A205-12		ID8B025032		THuang	1	☒	unk	---
33	18	2	6	2	Unk	A205-13		ID8B025033		THuang	1	☒	unk	---
34	19	2	7	2	QC	CCV3		ID8B025034		THuang	1	☒	CCV	None
35	20	2	8	2	QC	CCB3		ID8B025035		THuang	1	☒	3XIDL	None
36	69	3	9	1	QC	IPB034WB		ID8B025036		THuang	1	☒	DL	None
37	70	3	10	1	QC	IPB034WL		ID8B025037		THuang	1	☒	LCS-WDoD	None
38	21	2	9	2	Unk	A205-24		ID8B025038		THuang	1	☒	unk	---
39	22	2	10	2	Unk	A179-04		ID8B025039		THuang	1	☒	unk	---
40	23	2	11	2	Unk	A179-05		ID8B025040		THuang	1	☒	unk	---
41	68	3	8	1	Unk	B859-01	BOTTLE	ID8B025041		THuang	1	☒	unk	---
42	24	2	12	2	QC	CCV4		ID8B025042		THuang	1	☒	CCV	None
43	25	2	1	3	QC	CCB4		ID8B025043		THuang	1	☒	LOD	None
44	71	3	11	1	QC	TXB005SB	TCLP	ID8B025044		THuang	1	☒	1/2LOQ	None
45	72	3	12	1	Unk	B094-02A	TCLP	ID8B025045		THuang	1	☒	unk6010C	---
46	73	3	1	2	Unk	B094-02R	TCLP	ID8B025046		THuang	1	☒	unk6010C	---
47	74	3	2	2	Unk	B094-02J	TCLP	ID8B025047		THuang	1	☒	unk6010C	---
48	75	3	3	2	Unk	B094-02D	TCLP	ID8B025048		THuang	1	☒	unk6010C	---
49	76	3	4	2	Unk	B094-02M	TCLP	ID8B025049		THuang	1	☒	unk6010C	---
50	77	3	5	2	Blank	Blank		ID8B025050		THuang	1	☐		---

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Date File	Type	Anaylst	CorrFact	Check	Check Table	Fail Action
51	78	3	6	2	QC	MRLB2504		ID8B025051		THuang	1	☒	MRL-EMAX	None
52	79	3	7	2	QC	MRLB2505		ID8B025052		THuang	1	☒	MRL-AFCEE	None
53	80	3	8	2	QC	CCV5		ID8B025053		THuang	1	☒	CCV	None
54	81	3	9	2	QC	CCB5		ID8B025054		THuang	1	☒	LOD	None
55	26	2	2	3	Unk	B115-01		ID8B025055		THuang	1	☒	unk	---
56	27	2	3	3	Unk	B115-02		ID8B025056		THuang	1	☒	unk	---
57	28	2	4	3	Unk	B115-05		ID8B025057		THuang	1	☒	unk	---
58	29	2	5	3	Unk	B115-06		ID8B025058		THuang	1	☒	unk	---
59	30	2	6	3	Unk	B115-10		ID8B025059		THuang	1	☒	unk	---
60	31	2	7	3	Unk	B115-11		ID8B025060		THuang	1	☒	unk	---
61	32	2	8	3	Unk	B115-14		ID8B025061		THuang	1	☒	unk	---
62	33	2	9	3	Unk	B115-15		ID8B025062		THuang	1	☒	unk	---
63	34	2	10	3	Unk	B115-18		ID8B025063		THuang	1	☒	unk	---
64	35	2	11	3	Unk	B115-19		ID8B025064		THuang	1	☒	unk	---
65	36	2	12	3	QC	CCV6		ID8B025065		THuang	1	☒	CCV	None
66	37	2	1	4	QC	CCB6		ID8B025066		THuang	1	☒	3XIDL	None
67	38	2	2	4	QC	IPB031SB		ID8B025067		THuang	1	☒	1/2LOQ	None
68	39	2	3	4	QC	IPB031SL		ID8B025068		THuang	1	☒	LCS	None
69	40	2	4	4	QC	IPB031SC		ID8B025069		THuang	1	☒	LCS	None
70	41	2	5	4	Unk	B107-16A	dried & sieved	ID8B025070		THuang	1	☒	unk	---
71	42	2	6	4	Unk	B107-16	dried & sieved	ID8B025071		THuang	1	☒	unk	---
72	43	2	7	4	Unk	B107-16J	dried & sieved	ID8B025072		THuang	1	☒	unk	---
73	44	2	8	4	Unk	B107-16M	dried & sieved	ID8B025073		THuang	1	☒	unk	---
74	45	2	9	4	Unk	B107-16S	dried & sieved	ID8B025074		THuang	1	☒	unk	---
75	46	2	10	4	Unk	B107-03	dried & sieved	ID8B025075		THuang	1	☒	unk	---
76	47	2	11	4	Unk	B107-04	dried & sieved	ID8B025076		THuang	1	☒	unk	---
77	48	2	12	4	QC	CCV7		ID8B025077		THuang	1	☒	CCV	None
78	49	2	1	5	QC	CCB7		ID8B025078		THuang	1	☒	3XIDL	None
79	50	2	2	5	Unk	B107-07	dried & sieved	ID8B025079		THuang	1	☒	unk	---
80	51	2	3	5	Unk	B107-08	dried & sieved	ID8B025080		THuang	1	☒	unk	---
81	52	2	4	5	Unk	B107-09	dried & sieved	ID8B025081		THuang	1	☒	unk	---
82	53	2	5	5	Unk	B107-11	dried & sieved	ID8B025082		THuang	1	☒	unk	---
83	54	2	6	5	Unk	B107-12	dried & sieved	ID8B025083		THuang	1	☒	unk	---
84	55	2	7	5	Unk	B107-13	dried & sieved	ID8B025084		THuang	1	☒	unk	---
85	56	2	8	5	Unk	B107-17	dried & sieved	ID8B025085		THuang	1	☒	unk	---
86	57	2	9	5	QC	CCV8		ID8B025086		THuang	1	☒	CCV	None
87	58	2	10	5	QC	CCB8		ID8B025087		THuang	1	☒	3XIDL	None
88	59	2	11	5	Unk	B110-01	dried & sieved	ID8B025088		THuang	1	☒	unk	---
89	60	2	12	5	Unk	B110-02	dried & sieved	ID8B025089		THuang	1	☒	unk	---
90	61	3	1	1	Unk	B110-05	dried & sieved	ID8B025090		THuang	1	☒	unk	---
91	62	3	2	1	Unk	B110-06	dried & sieved	ID8B025091		THuang	1	☒	unk	---
92	63	3	3	1	Unk	B110-07	dried & sieved	ID8B025092		THuang	1	☒	unk	---
93	66	3	6	1	Unk	B109-06N	TOT	ID8B025093		THuang	1	☒	unk	---
94	67	3	7	1	Unk	B109-06N	DISS	ID8B025094		THuang	1	☒	unk	---
95	64	3	4	1	QC	CCV9		ID8B025095		THuang	1	☒	CCV	None
96	65	3	5	1	QC	CCB9		ID8B025096		THuang	1	☒	3XIDL	None

Status

Revision	41	
Date Created	8/14/2006 16:36:29	by admin
Date Modified	2/25/2016 17:37:54	by admin
Date Calibrated	2/25/2016 18:27:41	
Current Status	by admin	
Number of Elements	31	
Number of Wavelengths	33	
Calibration Type	External	
Notes:		

Analysis Preferences

Sample Options	# Repeats:	3			
	Delay Time:	0.0 seconds			
	Sample Flush Time:	19 seconds			
	Analysis mode	Speed			
Source	Sample Introduction	Nebulizer			
	Plasma View:	Line Selection			
Analysis Maximum Integration Times (sec)	Low WL Range	Axial	15	Radial	15
	High WL Range:	Axial	10	Radial	5
Calibration Mode	Concentration				
Trailing Full Frame Options	Intelli-Frame:		No		
	Max Integration Time (sec):		30		
	WL Range:		Low		
	View:		Axial		
	Auto-Increment Sample Names:		Yes		
	Use Sample Weight Corrections:		No		

Source Settings

Nebulizer Pump	Flush Pump Rate (rpm):	67	
	Analysis Pump Rate (rpm):	13	
	Pump Relaxation Time (sec):	2	
	Pump Tubing Type:	Tygon Orange/White	
	RF Power:	1150	W
	Nebulizer Flow:	0.55	L/min
	Auxiliary Gas:	0.5	L/min

Automated Output

Option	Unknowns	QC Std	Blanks	Standards	Recoveries	Duplicate	Time Scan
Save results to database	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Print results	No	No	No	No	No	No	No
Export results to comma	Yes	Yes	Yes	Yes	Yes	Yes	Yes

ID8B025 Section 1 of 3

INDX	LSID	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	LSID
1	Blank	.00085	.00001	-.00001	.00012	.00003	.00032	-.00001	.00033	-.00005	-.00088	Blank
2	S20					.85683		.10209				S20
3	S21					8.4794		.98054				S21
4	S22				.56133						.14632	S22
5	S23				5.4310						1.4831	S23
6	S24						.09095					S24
7	S25						.91518					S25
8	S26	.05564							.87423	.11662		S26
9	S27	4.2352							8.1579	1.1451		S27
10	S28		.00472									S28
11	S29		.04606									S29
12	S30			.00103								S30
13	S31			.00412								S31
14	ICV	100.93	1.5325	1.0453	2.0022	1.5510	2.5033	2.0275	81.284	2.5713	.99896	ICV
15	ICB	.00694	.00110	.00032	.00028	.00016	.00452	.00002	.01003	.00031	.00006	ICB
16	MRLB2502	.21220	.10301	.01032	.01022	.01000	.10010	.01069	1.1241	.01064	.00980	MRLB2502
17	MRLB2503	.20467	.05144	.01068	.00507	.00403	.09850	.00516	.55553	.01041	.01001	MRLB2503
18	ICSA1	376.58	.00777	.00006	.00055	.00007	-.02600*	.00059	493.85	.00143	.00057	ICSA1
19	ICSA81	378.09	1.0573	1.0993	.50625	.50671	.47471	.98164	508.38	.50372	.50551	ICSAB1
20	CCV1	106.36	1.5541	1.0801	2.0796	1.5699	2.5729	2.0614	81.414	2.6228	1.0146	CCV1
21	CCB1	.08281*	.00109	.00061	.00077	.00037	.00564	.00045	.08535	.00061	.00028	CCB1
22	CCV2	95.892	1.5084	1.0364	1.9210	1.4917	2.4531	1.9873	79.335	2.5101	.98622	CCV2
23	CCB2	.00778	.00031	.00081	.00024	.00022	.00356	.00010	.04399	.00018	.00024	CCB2
24	IPB032SB	.02839	.00107	-.00092	.00026	.00008	.00233	.00013	.01732	.00054	.00018	IPB032SB
25	IPB032SL	4.9352	2.5811	.52489	.51310	.50890	.48128	.51809	55.630	.53870	.54035	IPB032SL
26	IPB032SC	5.0353	2.5968	.53084	.52391	.52154	.48236	.52190	55.741	.54217	.54534	IPB032SC
27	A205-25A	64.255	2.4516	.57534	1.0384	.50006	.43822	.48817	76.761	.76010	.55449	A205-25A
28	A205-25	60.101	.01254	.07413	.55660	.00518	-.01456	.00548	24.116	.26675	.03643	A205-25
29	A205-25J	12.815	.00280	.01501	.11132	.00101	-.00168	.00113	4.9384	.05398	.00714	A205-25J
30	A205-25M	98.527	2.0562	.59238	1.1610	.51776	.41821	.50032	83.232	.80149	.57263	A205-25M
31	A205-25S	113.04	1.9792	.60735	1.2892	.50009	.39961	.48667	83.489	.80939	.58437	A205-25S
32	A205-12	59.219	.02054	.09294	.77457	.00683	-.00663	.24291	163.86	.28503	.09948	A205-12
33	A205-13	100.26	.02963	.21853	8.0206	.01653	-.04997*	.05398	50.166	.36842	1.1131	A205-13
34	CCV3	97.166	1.4979	1.0300	1.9646	1.5148	2.4609	1.9822	79.569	2.5270	.99082	CCV3
35	CCB3	.01720	.00088	.00195	.00067	.00025	.00273	.00019	.02928	.00039	.00022	CCB3
36	IPB034WB	.00286	.00047	.00045	.00020	.00009	.00151	-.00002	.05671	-.00003	.00004	IPB034WB
37	IPB034WL	5.2226	2.6343	.53627	.50710	.51178	.51596	.51890	54.182	.52005	.51076	IPB034WL
38	A205-24	43.346	.01026	.05091	1.0843	.00404	-.00487	.10765	94.670	.11902	.03171	A205-24
39	A179-04	42.379	.02052	.07140	.79378	.00441	.00307	.86423	253.93	.10905	.05262	A179-04
40	A179-05	52.515	.02575	.05224	.39164	.00922	.00392	.03007	120.87	.15846	.07938	A179-05
41	B859-01	.02452	-.00126	.00122	.11299	.00001	.20384	-.00006	111.29	.00056	-.00010	B859-01
42	CCV4	98.453	1.5227	1.0263	2.0193	1.5289	2.4227	1.9440	77.481	2.4279	.99594	CCV4
43	CCB4	.04005*	.00087	-.00053	.00071	.00056	.00389	.00067	.05096	.00094	.00035	CCB4
44	TXB005SB	.05388	.00145	.00081	.00117	.00018	.00740	.00034	.11442	.00086	-.00005	TXB005SB
45	B094-02A	20.564	2.5717	.54259	.76264	.50572	.51186	.48403	91.967	.50639	.51365	B094-02A
46	B094-02R	15.230	.00409	.00475	.26236	.00068	.01604	.00073	39.688	.01456	.00228	B094-02R
47	B094-02J	3.0225	.00042	.00167	.05195	.00009	.00348	-.00001	7.9792	.00240	.00054	B094-02J
48	B094-02D	14.115	.00061	.00339	.24718	.00049	.01427	.00021	37.568	.01124	.00192	B094-02D
49	B094-02M	30.311	2.6216	.55987	.83735	.50035	.53035	.49569	99.540	.52219	.51832	B094-02M
50	Blank	-.00045	.00104	.00034	.00021	.00003	.00064	-.00002	.05007	.00003	.00006	Blank
51	MRLB2504	.20545	.10313	.00962	.01036	.01008	.09698	.01030	1.1099	.01019	.01004	MRLB2504

52	MRLB2505	.20765	.05061	.01125	.00509	.00406	.09640	.00505	.54071	.01026	.01012	MRLB2505
53	CCV5	97.329	1.5196	1.0263	1.9739	1.5009	2.4326	1.9281	77.756	2.4435	.99586	CCV5
54	CCB5	.03104*	.00130	.00162	.00064	.00040	.00338	.00047	.04113	.00070	.00025	CCB5
55	B115-01	58.557	.00918	.06361	1.0065	.00490	-.00517	.04296	14.710	.10768	.07986	B115-01
56	B115-02	46.092	.00777	.05152	.66588	.00428	-.00341	.01501	14.094	.09671	.07901	B115-02
57	B115-05	54.741	.01090	.05397	.69931	.00444	-.00022	.16579	21.681	.09583	.08550	B115-05
58	B115-06	41.359	.00565	.03653	.69447	.00356	-.00624	.01015	9.3866	.07166	.05012	B115-06
59	B115-10	40.532	.02466	.03742	.53825	.00275	.00380	.10386	59.754	.06740	.02201	B115-10
60	B115-11	50.287	.00696	.04811	.63539	.00330	-.00635	.00678	9.8548	.08796	.03356	B115-11
61	B115-14	63.544	.01042	.08979	.83256	.00550	-.01155	.01021	9.7590	.18128	.04989	B115-14
62	B115-15	97.334	.01155	.09996	.96649	.00640	-.01131	.00074	8.8866	.17624	.06485	B115-15
63	B115-18	109.62	.00818	.06170	.89696	.00636	-.00574	.01415	23.302	.15046	.05543	B115-18
64	B115-19	59.824	.00720	.05458	.65067	.00397	-.00777	.00540	9.0946	.12684	.03644	B115-19
65	CCV6	99.353	1.5082	1.0026	1.9894	1.5272	2.4039	1.9069	78.882	2.4170	.98868	CCV6
66	CCB6	.01618	.00124	.00183	.00022	.00028	.00267	.00024	.03782	.00036	.00017	CCB6
67	IPB031SB	.03233	.00096	.00045	.00129	.00019	.00037	.00046	.02532	.00080	.00030	IPB031SB
68	IPB031SL	4.9406	2.5541	.51341	.51375	.49606	.46606	.49568	54.381	.52080	.53992	IPB031SL
69	IPB031SC	4.9078	2.5361	.51734	.50282	.49231	.46569	.49974	54.037	.52352	.53971	IPB031SC
70	B107-16A	93.618	2.4612	.55813	1.3333	.48294	.45283	.58003	96.251	.60309	.55898	B107-16A
71	B107-16	89.722	.01418	.05746	.85883	.00528	.00196	.11743	44.824	.11014	.03932	B107-16
72	B107-16J	19.596	.00433	.01355	.17623	.00105	.00046	.02399	9.1869	.02245	.00769	B107-16J
73	B107-16M	147.18	1.9301	.56978	1.5061	.50418	.45491	.60273	98.062	.65532	.58118	B107-16M
74	B107-16S	132.23	1.9298	.56009	1.3915	.50436	.44869	.59356	96.465	.63835	.57491	B107-16S
75	B107-03	54.113	.00672	.03434	.65847	.00360	.00409	.05940	48.926	.07046	.03941	B107-03
76	B107-04	54.824	.00444	.03214	.59834	.00315	-.00102	.01518	23.906	.06576	.04077	B107-04
77	CCV7	99.228	1.5068	1.0139	1.9898	1.5160	2.4301	1.9257	78.652	2.4671	.99245	CCV7
78	CCB7	.02440	.00147	-.00117	.00048	.00037	.00280	.00033	.04617	.00053	.00005	CCB7
79	B107-07	70.584	.00922	.05200	.78246	.00482	.00029	.04866	41.112	.09573	.04196	B107-07
80	B107-08	63.525	.00673	.04554	.70114	.00421	-.00033	.04689	29.009	.08422	.03591	B107-08
81	B107-09	62.886	.00615	.04812	.81532	.00398	-.00341	.01338	18.962	.08258	.04007	B107-09
82	B107-11	44.291	.01839	.04984	.41801	.00243	.00435	.87389	79.909	.09646	.02381	B107-11
83	B107-12	64.435	.01756	.05161	.61791	.00340	-.00233	.53975	77.479	.10977	.02804	B107-12
84	B107-13	127.33	.01713	.06167	.86152	.00547	-.00368	.44452	78.971	.15557	.03858	B107-13
85	B107-17	62.254	.00709	.03055	.62282	.00424	-.00376	.03359	19.370	.07047	.04186	B107-17
86	CCV8	98.960	1.5097	1.0154	1.9796	1.5125	2.4182	1.9263	79.127	2.4512	.98786	CCV8
87	CCB8	.01977	.00024	.00057	.00039	.00030	.00237	.00021	.03117	.00047	.00020	CCB8
88	B110-01	54.413	.00865	.04125	.62259	.00362	.00192	.08130	20.022	.08047	.03537	B110-01
89	B110-02	57.829	.00515	.03856	.55175	.00325	-.00286	.00563	12.291	.07317	.03442	B110-02
90	B110-05	61.670	.00632	.04314	.67664	.00419	.00445	.03849	23.122	.07744	.04011	B110-05
91	B110-06	53.094	.00375	.03110	.56425	.00338	-.00273	.00468	7.8350	.06166	.04162	B110-06
92	B110-07	56.378	.00473	.03217	.55537	.00331	-.00236	.01081	10.040	.06744	.03123	B110-07
93	B109-06N	.04528	-.00018	.00113	.02990	.00000	.00267	.00263	45.053	.00020	-.00001	B109-06N
94	B109-06N	.00245	.00028	.00158	.02885	-.00002	.00207	.00225	44.161	.00040	-.00012	B109-06N
95	CCV9	104.07	1.5255	1.0456	2.0277	1.5226	2.5090	1.9715	80.502	2.5465	1.0069	CCV9
96	CCB9	.03211*	.00146	.00156	.00062	.00048	.00232	.00040	.02718	.00080	.00022	CCB9
INDX	LSID	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	LSID

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INDX	LSID	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	LSID
1	Blank	.00141	.00008	.00017	-.00023	.00000	-.00001	-.00008	-.00073	-.00022	.00001	Blank
2	S20			.20728			.09996					S20
3	S21			2.0168			.99145					S21
4	S22	.25997	.01135									S22
5	S23	2.5039	.99932									S23
6	S24							.75308				S24
7	S25							7.4300				S25
8	S26								.73744	.34346		S26
9	S27								7.2056	3.4042		S27
10	S28					.02270						S2B
11	S29					.23349						S29
12	S30				.02417						.00119	S30
13	S31				.12477						.00463	S31
14	ICV	2.5286	24.254	2.5183	.54851	57.812	2.5182	2.5423	2.5922	61.898	1.0776	ICV
15	ICB	.00008	-.01017	.00054	.00020	.00722	.00061	.00037	.00033	.10336	.00121	ICB
16	MRLB2502	.01044	.17898	.01051	.01062	.96881	.01034	.00994	.01077	1.0523	.00973	MRLB2502
17	MRLB2503	.01029	.09196	.00284	.10226	.18983	.00522	.00983	.01055	1.0458	.00960	MRLB2503
18	ICSA1	.00109	185.70	.00000	.00360	189.21	.00133	-.00090	-.00068	.08021	-.00062	ICSA1
19	ICSAB1	.53701	187.47	1.0092	1.1841	191.87	.48072	1.0733	1.0407	84.051	1.0983	ICSAB1
20	CCV1	2.5751	24.551	2.5523	.55435*	58.917	2.4376	2.7201	2.6586	64.034	1.1058*	CCV1
21	CCB1	.00068	.02441	.00053	.00100	.03106	.00072	.00088	.00069	.12628	.00053	CCB1
22	CCV2	2.4914	24.041	2.4801	.53684	55.101	2.4622	2.5035	2.5536	60.248	1.0684	CCV2
23	CCB2	.00089	-.00801	.00029	-.00002	.00618	.00051	.00052	.00050	.10302	-.00138	CCB2
24	IPB032SB	.00113	.00314	.00006	.00030	.00796	.00052	.00046	.00055	.06168	.00004	IPB032SB
25	IPB032SL	.52150	5.1729	.52709	-.00001*	48.316	.50499	.57603	.56236	53.265	.53390	IPB032SL
26	IPB032SC	.52233	5.1777	.53253	.00030*	49.317	.50835	.57777	.56812	53.370	.53503	IPB032SC
27	A205-25A	.54203	150.10	.80129	.03075	52.470	2.4154	.55833	.59423	54.993	.51406	A205-25A
28	A205-25	.04604	151.68	.30823	.03005	5.0813	2.0379	.00785	.05303	3.4128	.00641	A205-25
29	A205-25J	.00900	31.210	.06189	.00605	1.0403	.41592	.00145	.01018	.67837	.00092	A205-25J
30	A205-25M	.56526	243.26	.80945	.05218	54.955	2.9247	.55446	.62274	57.088	.50147	A205-25M
31	A205-25S	.59787	268.78	.90375	.07468	54.224	3.2376	.54326	.63843	57.070	.49694	A205-25S
32	A205-12	.31869	240.11	10.497	.03977	20.476	7.7487	.01485	.16620	6.0173	.00994	A205-12
33	A205-13	.15913	634.67*	1.8883	.06246	6.8098	52.371*	.01408	.30442	5.5867	.00284	A205-13
34	CCV3	2.4950	23.972	2.4782	.53986	56.100	2.4863	2.5080	2.5731	61.071	1.0593	CCV3
35	CCB3	.00025	.00231	.00046	.00063	.00975	.00196	.00066	.00052	.07894	-.00017	CCB3
36	IPB034WB	.00058	-.00404	.00033	.00024	.00604*	.00076	.00008	.00026	.02424	.00056	IPB034WB
37	IPB034WL	.51434	5.0591	.51317	.00013*	48.040	.49082	.53114	.53401	52.432	.54963	IPB034WL
38	A205-24	.12940	116.32	8.4621	.02286	6.49B0	1.8296	.00595	.06771	5.0845	.00575	A205-24
39	A179-04	.78727	132.67	5.4262	.03910	38.865	3.8833	.02129	.12048	7.0664	.01111	A179-04
40	A179-05	.23121	586.64*	.68138	.08232	27.474	13.293	.00221	.25614	15.543	.00576	A179-05
41	B859-01	.00126	.20527	.00317	.00711	44.461	.04427	.00637	.00045	4.5641	-.00128	B859-01
42	CCV4	2.4536	22.917	2.5048	.53743	55.377	2.4026	2.5613	2.5974	60.341	1.0663	CCV4
43	CCB4	.00087	-.00137	.00086	.00102	.02501	.00103	.00121	.00102	.10249*	-.00049	CCB4
44	TXB005SB	.00276	.00012	.00058	.00111	.03739	.00080	.00074	.00079	.16952	.00136	TXB005SB
45	B094-02A	.51545	12.389	.51123	.01454	52.198	.66225	.54298	.54098	59.051	.56243	B094-02A
46	B094-02R	.01785	7.9797	.01161	.01392	5.2871	.19672	.00095	.01061	5.1507	.00399	B094-02R
47	B094-02J	.00196	1.6346	.00198	.00345	1.0702	.03985	-.00001	.00215	1.0501	.00016	B094-02J
48	B094-02D	.00724	7.5423	.00976	.01206	4.9920	.18590	.00022	.00933	4.7345	.00242	B094-02D
49	B094-02M	.52885	17.369	.52033	.02120	52.411	.72741	.54103	.54817	61.750	.58641	B094-02M
50	Blank	.00010	-.01070	.00017	.00063	.02801	.00031	-.00007	.00012	.19413	.00022	Blank
51	MRLB2504	.01066	.18041	.01050	.01094	.97228	.01006	.01011	.01049	1.1122	.01036	MRLB2504

INDX	LSID	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	LSID
52	MRLB2505	.01021	.08644	.00317	.10362	.19701	.00533	.01014	.01058	1.0581	.01058	MRLB2505
53	CCV5	2.4796	23.148	2.5008	.53599	54.438	2.4151	2.5590	2.5886	60.156	1.0652	CCV5
54	CCB5	.00156	-.00493	.00081	.00046	.01453	.00090	.00104	.00073	.11431*	-.00029	CCB5
55	B115-01	.05539	110.96	1.9373	.02939	4.8024	5.5816	.00624	.04893	3.8974	.00478	B115-01
56	B115-02	.03510	85.983	.70207	.02519	3.9051	3.0030	.00474	.04037	2.8088	.00491	B115-02
57	B115-05	.13089	102.56	5.9316	.02674	5.3678	3.7335	.00704	.06348	4.3368	.00346	B115-05
58	B115-06	.03632	77.339	.26073	.01864	3.3698	2.4963	.00402	.02913	2.3537	.00401	B115-06
59	B115-10	.14237	59.312	6.8682	.02341	5.3552	1.2785	.00468	.04358	2.9364	.00579	B115-10
60	B115-11	.02908	85.221	.22069	.02641	3.7611	2.0353	.00453	.02810	2.8188	.00297	B115-11
61	B115-14	.05393	153.57	.83372	.02857	4.7985	2.6660	.00814	.04511	3.2955	.00314	B115-14
62	B115-15	.04294	193.50	.25619	.04527	7.1315	3.4449	.00938	.04372	4.2555	.00668	B115-15
63	B115-18	.07413	138.39	.62229	.05468	8.9505	2.2988	.00517	.06677	5.4116	.00439	B115-18
64	B115-19	.02659	108.56	.20450	.02970	4.7336	1.4710	.00561	.03406	3.2438	.00417	B115-19
65	CCV6	2.4067	23.148	2.5043	.52983	56.287	2.3920	2.5677	2.5862	59.903	1.0405	CCV6
66	CCB6	.00058	-.00456	.00063	.00038	.00255	.00080	.00079	.00045	.07176	-.00067	CCB6
67	IPB031SB	.00073	.01229	.00044	.00012	.01116	.00129	.00092	.00099	.06582	.00095	IPB031SB
68	IPB031SL	.52075	5.1292	.52630	.00034*	46.501	.49711	.57789	.55871	52.177	.51532	IPB031SL
69	IPB031SC	.52163	5.1054	.52379	-.00044*	46.021	.49388	.57277	.55780	51.887	.51966	IPB031SC
70	B107-16A	.64391	114.07	2.9931	.04966	52.662	1.8724	.56094	.60648	57.044	.51317	B107-16A
71	B107-16	.13145	112.82	2.6017	.04836	7.5882	1.4553	.00610	.07005	5.6658	.00578	B107-16
72	B107-16J	.02584	23.366	.52503	.00949	1.6010	.29994	.00105	.01339	1.1471	.00094	B107-16J
73	B107-16M	.67168	130.73	3.1326	.08816	56.583	1.9557	.56182	.63832	60.517	.52303	B107-16M
74	B107-16S	.65785	122.17	3.0195	.07553	55.776	1.8896	.55941	.63047	59.070	.51887	B107-16S
75	B107-03	.06190	54.764	.82421	.03240	4.6779	2.3061	.00347	.05499	4.8781	.00318	B107-03
76	B107-04	.03402	52.503	.30102	.03006	4.1726	2.0104	.00293	.03724	3.7285	.00247	B107-04
77	CCV7	2.4764	23.256	2.4898	.53488	55.643	2.4303	2.5435	2.5761	60.649	1.0513	CCV7
78	CCB7	.00046	-.00325	.00011	.00038	.01681	.00069	.00088	.00051	.10685	-.00101	CCB7
79	B107-07	.07639	90.988	1.2979	.03838	5.5419	2.0575	.00547	.05439	4.9131	.00356	B107-07
80	B107-08	.07310	78.468	1.2197	.03127	5.0923	1.9057	.00451	.04397	4.6562	.00267	B107-08
81	B107-09	.04209	83.734	.47781	.03332	4.8316	1.8911	.00468	.03658	3.8224	.00309	B107-09
82	B107-11	.24474	77.127	8.8759	.02323	3.8076	1.2894	.01162	.07625	3.3744	.00243	B107-11
83	B107-12	.18551	92.667	5.5306	.03328	4.9206	1.1953	.01033	.07447	3.9812	.00409	B107-12
84	B107-13	.17881	134.87	4.8696	.05913	10.060	1.3037	.01071	.08857	6.6834	.00355	B107-13
85	B107-17	.06851	68.981	.97250	.03335	4.9173	1.1057	.00403	.03930	3.5807	.00449	B107-17
86	CCV8	2.4457	23.423	2.4957	.53032	55.874	2.4131	2.5464	2.5728	60.370	1.0499	CCV8
87	CCB8	.00042	-.00553	.00043	.00109	.01152	.00069	.00082	.00059	.06919	-.00012	CCB8
88	B110-01	.12157	68.700	4.1086	.02756	4.7824	2.1740	.00419	.04887	3.5712	.00461	B110-01
89	B110-02	.03214	65.202	.43880	.02770	4.1445	1.6633	.00395	.03332	3.7008	.00506	B110-02
90	B110-05	.06764	74.580	1.4813	.03275	5.7402	1.8761	.00366	.05457	5.6373	.00429	B110-05
91	B110-06	.02366	53.756	.14661	.02717	4.4592	1.4641	.00292	.02821	3.1465	.00165	B110-06
92	B110-07	.03035	60.796	.34315	.02925	4.7085	1.1110	.00305	.03456	3.9100	.00407	B110-07
93	B109-06N	.00190	.07397	.00104	.00172	1.8986	.00499	.00048	.00194	3.5583	-.00047	B109-06N
94	B109-06N	.00137	.01524	.00045	.00156	1.8603	.00430	.00038	.00188	3.4845	-.00057	B109-06N
95	CCV9	2.5186	24.102	2.5336	.54206	57.141	2.3552	2.7280	2.6394	62.809	1.0693	CCV9
96	CCB9	.00093	-.00368	.00056	.00053	.00920	.00081	.00092*	.00090	.09279	-.00041	CCB9

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INDX	LSID	Ag	Na	Sr	Tl	Sn	Ti	V	Zn	LSID
1	Blank	.00005	.00049	-.00004	-.00003	.00003	.00004	-.00019	.00216	Blank
2	S20									S20
3	S21									S21
4	S22							.12946		S22
5	S23							1.3083		S23
6	S24		1.0982							S24
7	S25		6.1852							S25
8	S26									S26
9	S27									S27
10	S28				.00529					S28
11	S29				.05050					S29
12	S30	.03821		.12911		.02484	.01760		.58232	S30
13	S31	.19512		.64939		.12553	.08892		5.7281	S31
14	ICV	.50794	65.623	.49129	2.3489	.51482	.50482	1.4909	2.6696	ICV
15	ICB	.00011	.04669	.00010	.00102	-.00002	.00013	.00021	-.00147	ICB
16	MRLB2502	.01028	1.0767	.01012	.01158	.10362	.00975	.01042	.01884	MRLB2502
17	MRLB2503	.01005	.54546	.01020	.01095	.01050	.00988	.01018	.00776*	MRLB2503
18	ICSA1	-.00006	.08936	.00001	-.00179	.00153	.00413	-.00036	.00253	ICSA1
19	ICSAB1	1.0958	84.405	.51084	.84331	1.0248	1.0121	.50480	1.0764	ICSAB1
20	CCV1	.51821	66.052*	.51323	2.3379	.52831	.51721	1.5378	2.7873*	CCV1
21	CCB1	.00022	.06929	.00014	.00066	.00045	.00033	.00060	-.00166	CCB1
22	CCV2	.49572	63.855	.47984	2.2925	.50847	.48594	1.4807	2.6307	CCV2
23	CCB2	.00016	.05697	.00003	.00064	-.00006	-.00016	.00027	.00251	CCB2
24	IPB032SB	.00004	.03010	.00007	-.00053	.01580	.00007	.00031	-.00001	IPB032SB
25	IPB032SL	.50711	54.862	.51555	.46120	.58415	.52559	.53196	.57239	IPB032SL
26	IPB032SC	.51255	54.851	.51512	.46753	.58546	.53311	.53165	.57565	IPB032SC
27	A205-25A	.47776	53.389	.57196	.42491	.56312	1.1213	.78383	1.8288	A205-25A
28	A205-25	.00001	.37047	.08192	-.00539*	.03783	.63266	.29531	1.3251	A205-25
29	A205-25J	.00003	.06996	.01630	-.00033	.00744	.12511	.05896	.25339	A205-25J
30	A205-25M	.49989	54.184	.58714	.42441	.56846	1.3568	.93052	2.6613	A205-25M
31	A205-25S	.49631	53.334	.60146	.41322	.55518	1.2968	.95026	2.2942	A205-25S
32	A205-12	-.00018	.22763	.13571	-.00617*	.03889	.40204	.25830	44.232*	A205-12
33	A205-13	-.00022	.41821	.10578	-.02015*	.04101	.59818	.51709	8.9871	A205-13
34	CCV3	.49876	64.784	.48646	2.2828	.50477	.49083	1.4632	2.6221	CCV3
35	CCB3	.00017	.02381	-.00001	.00073	.00070	-.00007	.00040	-.00144	CCB3
36	IPB034WB	.00006	.01774	.00019	.00045	.00024	.00012	.00017	-.00015	IPB034WB
37	IPB034WL	.51586	54.018	.50226	.47932	.52777	.51667	.50876	.53952	IPB034WL
38	A205-24	.00019	.32586	.13128	-.00402	.03801	.42082	.18735	17.676	A205-24
39	A179-04	-.00041	.52452	.23273	-.00486	.03733	.28929	.12880	93.266*	A179-04
40	A179-05	-.00005	.60745	.27559	-.00869*	.03896	.22034	.21826	5.1330	A179-05
41	B859-01	-.00007	133.26	.56939	.00238	-.00035	.00164	.00373	.00868	B859-01
42	CCV4	.48829	64.039	.48608	2.2834	.51350	.50137	1.4376	2.5986	CCV4
43	CCB4	.00032	.05943	.00015	.00170	.00020	.00031	.00072	-.00069	CCB4
44	TXB005SB	-.00004	299.68*	.00077	-.00152	.00108	.00027	.00054	.00222	TXB005SB
45	B094-02A	.50573	352.58*	.67898	.42392	.52971	1.0751*	.51766	.57091	B094-02A
46	B094-02R	.00026	305.21*	.19655	-.00278	.00159	.52879	.02152	.03546	B094-02R
47	B094-02J	.00004	62.246	.03911	.00001	.00030	.11371	.00444	.00415	B094-02J
48	B094-02D	-.00003	290.42*	.18626	-.00269	.00122	.52890	.02002	.02427	B094-02D
49	B094-02M	.52954	416.05*	.73609	.42723	.52193	1.2791*	.53036	.59200	B094-02M
50	Blank	.00000	.32745	.00013	.00043	.00018	.00062	.00026	-.00095	Blank
51	MRLB2504	.01014	1.2311*	.01037	.01098	.10509	.01023	.01015	.01823	MRLB2504

INDX	LSID	Ag	Na	Sr	Tl	Sn	Ti	V	Zn	LSID
52	MRLB2505	.00988	.64066*	.01030	.01088	.01076	.01043	.01025	.00769*	MRLB2505
53	CCV5	.49166	63.650	.48405	2.2629	.51409	.49164	1.4481	2.5936	CCV5
54	CCB5	.00027	.11706*	.00015	.00134	.00019	.00019	.00064	-.00072	CCB5
55	B115-01	-.00043	.46501	.06737	-.00663*	.03484	.48323	.26222	8.1198	B115-01
56	B115-02	-.00045	1.1609	.07704	-.00685*	.03490	.41453	.27509	3.0129	B115-02
57	B115-05	-.00018	.37560	.08346	-.00654*	.04972	.35566	.24574	24.700	B115-05
58	B115-06	-.00036	.43125	.06687	-.00582*	.03852	.30837	.22099	1.8658	B115-06
59	B115-10	-.00010	.56530	.07661	-.00503*	.03511	.44617	.13842	17.766	B115-10
60	B115-11	-.00055	.36623	.05515	-.00569*	.03207	.49500	.22716	1.2620	B115-11
61	B115-14	-.00029	.63276	.08590	-.00573*	.03479	.50900	.38211	1.8975	B115-14
62	B115-15	-.00021	.95512	.09294	-.00676*	.03293	.61247	.46807	.40735	B115-15
63	B115-18	-.00049	.57800	.11066	-.00617*	.03671	.70218	.31539	2.6217	B115-18
64	B115-19	-.00026	.47596	.07061	-.00572*	.03451	.53273	.30348	1.1969	B115-19
65	CCV6	.48503	63.600	.47561	2.2611	.51713	.50060	1.4444	2.5961	CCV6
66	CCB6	.00013	.04337	.00011	.00094	.00013	.00018	.00029	-.00135	CCB6
67	IPB031SB	-.00004	.04563	.00006	-.00051	.03583	.00008	.00058	.00081	IPB031SB
68	IPB031SL	.49901	53.809	.50464	.44805	.59403	.51390	.53023	.56858	IPB031SL
69	IPB031SC	.50074	53.450	.50130	.45090	.58281	.50784	.52823	.56136	IPB031SC
70	B107-16A	.47969	53.562	.62095	.40924	.57830	1.1509	.72104	17.441	B107-16A
71	B107-16	.00004	.57234	.13088	-.00669*	.04921	.67219	.22749	17.256	B107-16
72	B107-16J	-.00003	.11785	.02645	-.00074	.00982	.13697	.04594	3.3945	B107-16J
73	B107-16M	.50872	54.562	.65880	.41801	.58789	1.3641	.77340	18.654	B107-16M
74	B107-16S	.50437	54.144	.64297	.41932	.58905	1.2080	.74938	17.042	B107-16S
75	B107-03	-.00040	.37857	.08250	-.00589*	.03804	.42917	.14491	10.007	B107-03
76	B107-04	-.00059	.38274	.06759	-.00593*	.03606	.54794	.15063	2.6939	B107-04
77	CCV7	.49232	64.190	.48586	2.2621	.51053	.49668	1.4466	2.5854	CCV7
78	CCB7	.00010	.04788	.00012	.00167	-.00041	.00013	.00043	-.00035	CCB7
79	B107-07	-.00044	.43051	.09471	-.00576*	.03746	.56104	.20700	7.8134	B107-07
80	B107-08	-.00045	.33777	.07808	-.00542*	.03787	.50239	.18186	7.4831	B107-08
81	B107-09	-.00055	.43820	.08207	-.00534*	.03601	.72688	.19502	2.6248	B107-09
82	B107-11	.00016	.30916	.08844	-.00334	.03130	.38895	.12048	91.674*	B107-11
83	B107-12	-.00010	.33468	.10334	-.00510*	.03649	.59747	.19562	68.331*	B107-12
84	B107-13	-.00004	.54469	.16012	-.00576*	.03717	.89372	.28883	60.871*	B107-13
85	B107-17	-.00067	.39353	.07364	-.00522*	.03542	.64173	.16799	3.9302	B107-17
86	CCV8	.48954	63.897	.48065	2.2685	.51614	.49734	1.4547	2.6021	CCV8
87	CCB8	.00007	.03329	.00003	.00167	.00004	-.00028	.00044	-.00122	CCB8
88	B110-01	-.00015	.38108	.05808	-.00413	.03660	.62331	.16839	13.030	B110-01
89	B110-02	-.00050	.35088	.05016	-.00539*	.03633	.67882	.16804	1.0989	B110-02
90	B110-05	-.00048	.53444	.09631	-.00490	.03987	.50734	.17113	6.4801	B110-05
91	B110-06	-.00057	.47743	.06538	-.00530*	.03331	.56172	.15209	1.2347	B110-06
92	B110-07	-.00049	.58166	.06513	-.00453	.03441	.57468	.16209	2.1996	B110-07
93	B109-06N	-.00025	1.6975	.06432	-.00008	.00010	.00132	.00032	1.2514	B109-06N
94	B109-06N	-.00022	1.6544	.06263	.00039	-.00016	.00070	.00032	1.2292	B109-06N
95	CCV9	.50647	64.835	.50091	2.2542	.53324	.50662	1.5201	2.7517*	CCV9
96	CCB9	.00032	.03753	.00010	.00174	.00022	.00007	.00071	-.00170	CCB9

ID8B025 Section 3 of 3

1 9 9 3

Sample Name: Blank Acquired: 2/25/2016 17:46:58 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00085	.00001	-.00001	.00012	.00003	.00032	-.00001	.00033	-.00005
Stddev	.00003	.00000	.00000	.00006	.00002	.00002	.00001	.00001	.00001
%RSD	3.8031	15.881	35.753	54.666	64.020	5.5216	62.236	1.8759	23.545
#1	.00087	.00001	-.00001	.00014	.00004	.00034	-.00002	.00033	-.00004
#2	.00086	.00001	-.00001	.00005	.00003	.00031	-.00001	.00032	-.00006
#3	.00081	.00001	.00000	.00017	.00001	.00031	-.00001	.00033	-.00005

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00088	.00141	.00008	.00017	-.00023	.00000	-.00001	-.00008	-.00073
Stddev	.00010	.00002	.00002	.00007	.00008	.00002	.00001	.00001	.00014
%RSD	11.477	1.2175	18.336	44.131	32.861	625.59	196.12	7.6213	19.038
#1	-.00096	.00143	.00010	.00010	-.00024	.00000	-.00001	-.00009	-.00067
#2	-.00076	.00139	.00008	.00025	-.00015	-.00001	.00001	-.00008	-.00063
#3	-.00091	.00142	.00007	.00017	-.00030	.00003	-.00001	-.00008	-.00089

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00022	.00001	.00005	.00049	-.00004	-.00003	.00003	.00004	-.00019
Stddev	.00007	.00000	.00007	.00006	.00002	.00000	.00003	.00002	.00003
%RSD	30.256	18.418	124.67	12.579	45.614	6.6008	86.523	48.757	15.171
#1	-.00018	.00001	.00000	.00049	-.00003	-.00003	.00003	.00005	-.00018
#2	-.00030	.00001	.00013	.00054	-.00007	-.00003	.00006	.00002	-.00022
#3	-.00018	.00002	.00004	.00042	-.00004	-.00004	.00001	.00005	-.00016

Elem	Zn
Units	Cts/S
Avg	.00216
Stddev	.00008
%RSD	3.4763
#1	.00207
#2	.00219
#3	.00221

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6920.7	106010.	182440.
Stddev	30.1	863.	1531.
%RSD	.43448	.81435	.83927
#1	6886.8	106860.	181370.
#2	6944.1	105130.	181760.
#3	6931.1	106050.	184200.

Sample Name: S20 Acquired: 2/25/2016 17:50:05 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Be	Cd	Pb	Mn
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.85683	.10209	.20728	.09996
Stddev	.00333	.00035	.00075	.00046
%RSD	.38833	.33839	.36251	.46139
#1	.85535	.10202	.20812	.09949
#2	.85451	.10247	.20665	.09997
#3	.86064	.10179	.20708	.10042

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	7063.9	109170.	186650.
Stddev	63.9	1065.	1668.
%RSD	.90406	.97592	.89374
#1	6995.5	110390.	185370.
#2	7074.3	108620.	186050.
#3	7122.0	108480.	188540.

Sample Name: S21 Acquired: 2/25/2016 17:53:08 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Be	Cd	Pb	Mn
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8.4794	.98054	2.0168	.99145
Stddev	.0720	.00460	.0023	.00401
%RSD	.84942	.46918	.11423	.40461
#1	8.5398	.98031	2.0191	.98781
#2	8.3997	.98525	2.0145	.99079
#3	8.4986	.97605	2.0167	.99575

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	7088.5	108640.	187440.
Stddev	40.8	428.	1227.
%RSD	.57508	.39359	.65475
#1	7041.9	109050.	186620.
#2	7106.3	108670.	186850.
#3	7117.3	108190.	188850.

Sample Name: S22 Acquired: 2/25/2016 17:56:21 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Ba	Co	Cu	Fe	V
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.56133	.14632	.25997	.01135	.12946
Stddev	.00407	.00028	.00129	.00004	.00015
%RSD	.72449	.19061	.49466	.31356	.11478
#1	.56101	.14649	.25892	.01132	.12963
#2	.56554	.14600	.25960	.01139	.12937
#3	.55743	.14647	.26141	.01133	.12938

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	7118.9	106220.	184930.
Stddev	80.9	891.	933.
%RSD	1.1368	.83897	.50425
#1	7027.3	107030.	184340.
#2	7148.9	105270.	184450.
#3	7180.6	106360.	186010.

Sample Name: S23 Acquired: 2/25/2016 17:59:27 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Ba	Co	Cu	Fe	V
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.4310	1.4831	2.5039	.99932	1.3083
Stddev	.0369	.0027	.0262	.00236	.0023
%RSD	.67860	.18376	1.0474	.23648	.17638
#1	5.4190	1.4815	2.4923	1.0018	1.3104
#2	5.4016	1.4816	2.4855	.99916	1.3087
#3	5.4724	1.4862	2.5339	.99704	1.3058

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6676.7	107500.	182350.
Stddev	32.7	851.	1816.
%RSD	.48972	.79179	.99575
#1	6644.7	108430.	180640.
#2	6710.0	106760.	182140.
#3	6675.4	107310.	184260.

Sample Name: S24 Acquired: 2/25/2016 18:02:46 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	B	Mo	Na
Units	Cts/S	Cts/S	Cts/S
Avg	.09095	.75308	1.0982
Stddev	.00020	.00098	.0023
%RSD	.21705	.12949	.20711
#1	.09072	.75203	1.0961
#2	.09104	.75395	1.0977
#3	.09108	.75326	1.1006

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6803.5	109680.	179610.
Stddev	33.9	908.	1643.
%RSD	.49799	.82804	.91482
#1	6764.9	110460.	178400.
#2	6817.7	108680.	178950.
#3	6828.1	109900.	181480.

Sample Name: S25 Acquired: 2/25/2016 18:05:51 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	B	Mo	Na
Units	Cts/S	Cts/S	Cts/S
Avg	.91518	7.4300	6.1852
Stddev	.00135	.0187	.0656
%RSD	.14734	.25203	1.0607
#1	.91366	7.4365	6.1240
#2	.91625	7.4089	6.1771
#3	.91561	7.4446	6.2544

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6284.7	112780.	173670.
Stddev	34.6	584.	1303.
%RSD	.54986	.51799	.75019
#1	6254.9	113360.	172440.
#2	6322.6	112190.	173520.
#3	6276.6	112780.	175030.

Sample Name: S26 Acquired: 2/25/2016 18:09:03 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Al	Ca	Cr	Ni	K
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05564	.87423	.11662	.73744	.34346
Stddev	.00009	.00386	.00028	.00149	.00111
%RSD	.15421	.44096	.23664	.20139	.32425
#1	.05572	.86991	.11631	.73843	.34229
#2	.05555	.87734	.11683	.73816	.34451
#3	.05565	.87543	.11671	.73573	.34359

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6588.7	111980.	179020.
Stddev	76.1	818.	1179.
%RSD	1.1556	.73078	.65882
#1	6516.7	112690.	178000.
#2	6581.1	111090.	178750.
#3	6668.4	112170.	180310.

Sample Name: S27 Acquired: 2/25/2016 18:12:09 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Al	Ca	Cr	Ni	K
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.2352	8.1579	1.1451	7.2056	3.4042
Stddev	.0429	.1424	.0043	.0195	.0163
%RSD	1.0130	1.7449	.37262	.27057	.47846
#1	4.1964	8.3058	1.1458	7.1859	3.3970
#2	4.2278	8.0218	1.1405	7.2249	3.3926
#3	4.2813	8.1460	1.1490	7.2061	3.4228

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5672.0	108170.	163250.
Stddev	41.5	641.	729.
%RSD	.73246	.59302	.44679
#1	5707.8	107460.	162450.
#2	5681.7	108710.	163430.
#3	5626.4	108340.	163880.

Sample Name: S28 Acquired: 2/25/2016 18:15:40 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Sb	Mg	Tl
Units	Cts/S	Cts/S	Cts/S
Avg	.00472	.02270	.00529
Stddev	.00004	.00013	.00005
%RSD	.95144	.56726	.89122
#1	.00467	.02262	.00524
#2	.00475	.02262	.00532
#3	.00473	.02284	.00532

Int. Std.	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S
Avg	107050.	183200.
Stddev	679.	1425.
%RSD	.63450	.77796
#1	107800.	182450.
#2	106480.	182300.
#3	106860.	184840.

Sample Name: S29 Acquired: 2/25/2016 18:18:45 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Sb	Mg	Tl
Units	Cts/S	Cts/S	Cts/S
Avg	.04606	.23349	.05050
Stddev	.00024	.00045	.00030
%RSD	.51911	.19302	.59758
#1	.04614	.23313	.05072
#2	.04626	.23334	.05062
#3	.04580	.23399	.05015

Int. Std.	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S
Avg	109330.	182100.
Stddev	294.	1627.
%RSD	.26902	.89321
#1	109660.	180540.
#2	109100.	181970.
#3	109230.	183780.

Sample Name: S30 Acquired: 2/25/2016 18:21:51 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	As	Li	Se	Ag	Sr	Sn	Ti	Zn
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00103	.02417	.00119	.03821	.12911	.02484	.01760	.58232
Stddev	.00001	.00001	.00001	.00013	.00030	.00010	.00014	.00057
%RSD	.72456	.03166	.69659	.32982	.23106	.38880	.78249	.09867
#1	.00102	.02418	.00118	.03809	.12911	.02484	.01760	.58282
#2	.00104	.02416	.00119	.03821	.12941	.02494	.01774	.58169
#3	.00104	.02417	.00120	.03834	.12882	.02474	.01746	.58246

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	7169.0	107870.	187200.
Stddev	76.5	1021.	871.
%RSD	1.0672	.94616	.46507
#1	7084.2	108570.	186590.
#2	7190.0	106700.	186820.
#3	7232.8	108350.	188200.

Sample Name: S31 Acquired: 2/25/2016 18:24:55 Type: Cal
Method: 16B6010(v41) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	As	Li	Se	Ag	Sr	Sn	Ti	Zn
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00412	.12477	.00463	.19512	.64939	.12553	.08892	5.7281
Stddev	.00002	.00011	.00000	.00024	.00352	.00049	.00025	.0041
%RSD	.40053	.08687	.09457	.12347	.54265	.39378	.28098	.07172
#1	.00413	.12465	.00462	.19520	.64872	.12609	.08898	5.7324
#2	.00414	.12482	.00463	.19485	.64626	.12520	.08865	5.7277
#3	.00411	.12485	.00463	.19531	.65321	.12528	.08914	5.7242

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	7117.8	108020.	187760.
Stddev	54.6	375.	1560.
%RSD	.76750	.34744	.83109
#1	7057.4	108440.	186390.
#2	7132.1	107730.	187410.
#3	7163.9	107880.	189460.

Sample Name: ICV Acquired: 2/25/2016 18:27:56 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025014 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	100.93	1.5325	1.0453	2.0022	1.5510	2.5033	2.0275	81.284	2.5713	.99896
Stddev	.70	.0126	.0076	.0128	.0098	.0088	.0148	.361	.0132	.00196
%RSD	.69591	.81962	.72615	.64031	.62861	.35068	.72890	.44368	.51447	.19649
#1	101.02	1.5372	1.0413	2.0121	1.5547	2.4939	2.0218	80.994	2.5661	.99725
#2	101.58	1.5420	1.0541	1.9877	1.5399	2.5112	2.0443	81.169	2.5864	.99854
#3	100.18	1.5182	1.0406	2.0067	1.5583	2.5047	2.0164	81.688	2.5616	1.0011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.5286	24.254	2.5183	.54851	57.812	2.5182	2.5423	2.5922	61.898	1.0776
Stddev	.0029	.145	.0007	.00218	.494	.0104	.0040	.0014	.228	.0074
%RSD	.11682	.59974	.02911	.39728	.85515	.41492	.15801	.05378	.36858	.68807
#1	2.5252	24.246	2.5191	.55096	57.656	2.5229	2.5467	2.5913	61.959	1.0771
#2	2.5308	24.403	2.5176	.54777	57.415	2.5062	2.5387	2.5915	61.645	1.0852
#3	2.5298	24.112	2.5182	.54680	58.366	2.5254	2.5416	2.5938	62.089	1.0704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.50794	65.623	.49129	2.3489	.51482	.50482	1.4909	2.6696
Stddev	.00139	.204	.00349	.0164	.00075	.00284	.0055	.0044
%RSD	.27453	.31082	.71087	.69847	.14623	.56243	.36578	.16414
#1	.50639	65.679	.49502	2.3543	.51567	.50480	1.4897	2.6648
#2	.50909	65.396	.48809	2.3620	.51424	.50199	1.4968	2.6734
#3	.50835	65.793	.49075	2.3305	.51455	.50766	1.4861	2.6707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5928.4	103000.	165730.
Stddev	41.7	886.	1549.
%RSD	.70306	.85998	.93456
#1	5881.1	103050.	164740.
#2	5944.4	103860.	164940.
#3	5959.8	102090.	167510.

Sample Name: ICB Acquired: 2/25/2016 18:30:55 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025015 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00694	.00110	.00032	.00028	.00016	.00452	.00002	.01003	.00031	.00006
Stddev	.00204	.00054	.00169	.00003	.00008	.00042	.00008	.00349	.00012	.00008
%RSD	29.451	49.064	528.33	10.536	47.465	9.2949	436.43	34.820	38.015	137.71
#1	.00920	.00170	-.00017	.00025	.00025	.00498	-.00003	.01396	.00037	.00009
#2	.00642	.00067	-.00107	.00031	.00014	.00440	.00011	.00884	.00039	-.00003
#3	.00521	.00092	.00220	.00027	.00010	.00417	-.00003	.00729	.00018	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00008	-.01017	.00054	.00020	.00722	.00061	.00037	.00033	.10336	.00121
Stddev	.00017	.00201	.00008	.00070	.00388	.00012	.00007	.00017	.01318	.00035
%RSD	214.24	19.755	15.494	356.23	53.749	19.067	18.059	50.262	12.753	29.260
#1	.00016	-.00792	.00059	.00058	.00366	.00070	.00044	.00024	.09678	.00105
#2	.00019	-.01080	.00045	.00063	.01136	.00048	.00031	.00052	.11854	.00096
#3	-.00012	-.01179	.00059	-.00062	.00666	.00067	.00034	.00023	.09477	.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00011	.04669	.00010	.00102	-.00002	.00013	.00021	-.00147
Stddev	.00015	.00902	.00003	.00023	.00047	.00033	.00005	.00005
%RSD	138.44	19.320	24.232	22.247	3028.4	247.16	23.741	3.4052
#1	-.00005	.05643	.00013	.00127	.00035	.00048	.00026	-.00150
#2	.00025	.04502	.00009	.00095	.00014	.00009	.00022	-.00141
#3	.00013	.03862	.00009	.00083	-.00054	-.00017	.00016	-.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	7058.3	105660.	183370.
Stddev	38.9	651.	1326.
%RSD	.55073	.61596	.72330
#1	7015.3	106370.	182180.
#2	7068.6	105090.	183120.
#3	7090.9	105520.	184800.

Sample Name: MRLB2502 Acquired: 2/25/2016 18:34:02 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025016 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.21220	.10301	.01032	.01022	.01000	.10010	.01069	1.1241	.01064	.00980
Stddev	.00110	.00114	.00047	.00016	.00009	.00037	.00010	.0070	.00007	.00028
%RSD	.51688	1.1106	4.5374	1.6132	.85388	.36966	.88880	.62200	.61203	2.8728
#1	.21346	.10202	.01086	.01003	.00993	.09967	.01065	1.1161	.01061	.00972
#2	.21142	.10426	.00998	.01029	.00998	.10033	.01080	1.1273	.01060	.01012
#3	.21173	.10274	.01013	.01034	.01010	.10029	.01063	1.1290	.01071	.00957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.01044	.17898	.01051	.01062	.96881	.01034	.00994	.01077	1.0523	.00973
Stddev	.00031	.00220	.00052	.00016	.01033	.00015	.00007	.00001	.0080	.00135
%RSD	2.9719	1.2288	4.9591	1.5161	1.0664	1.4118	.69204	.11321	.75813	13.836
#1	.01030	.17828	.01109	.01074	.97527	.01035	.00997	.01078	1.0557	.01120
#2	.01023	.18144	.01008	.01043	.95689	.01018	.00998	.01078	1.0580	.00942
#3	.01080	.17722	.01035	.01068	.97426	.01047	.00986	.01076	1.0432	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.01028	1.0767	.01012	.01158	.10362	.00975	.01042	.01884
Stddev	.00005	.0136	.00010	.00076	.00009	.00016	.00002	.00015
%RSD	.52855	1.2620	.97730	6.5694	.09128	1.6304	.19478	.77942
#1	.01029	1.0740	.01017	.01197	.10362	.00994	.01044	.01894
#2	.01022	1.0647	.01001	.01071	.10371	.00969	.01042	.01890
#3	.01033	1.0914	.01019	.01207	.10352	.00964	.01040	.01867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6861.6	105480.	178310.
Stddev	55.5	936.	1087.
%RSD	.80902	.88706	.60960
#1	6798.9	106560.	177600.
#2	6881.3	104950.	177760.
#3	6904.6	104930.	179560.

Sample Name: MRLB2503 Acquired: 2/25/2016 18:37:07 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025017 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.20467	.05144	.01068	.00507	.00403	.09850	.00516	.55553	.01041
Stddev	.00161	.00146	.00068	.00006	.00002	.00017	.00004	.00437	.00015
%RSD	.78643	2.8454	6.3598	1.2235	.48167	.16816	.74968	.78739	1.4713
#1	.20482	.05273	.01093	.00505	.00402	.09845	.00519	.55133	.01038
#2	.20621	.05175	.00991	.00501	.00405	.09837	.00517	.56006	.01058
#3	.20300	.04985	.01120	.00513	.00402	.09869	.00512	.55520	.01028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.01001	.01029	.09196	.00284	.10226	.18983	.00522	.00983	.01055
Stddev	.00008	.00010	.00371	.00052	.00035	.01580	.00009	.00004	.00015
%RSD	.76912	.96608	4.0312	18.233	.34594	8.3236	1.7578	.43639	1.4253
#1	.01006	.01036	.09053	.00235	.10227	.18106	.00531	.00988	.01053
#2	.00992	.01035	.08919	.00281	.10261	.18035	.00522	.00982	.01041
#3	.01004	.01018	.09617	.00338	.10190	.20807	.00512	.00979	.01071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0458	.00960	.01005	.54546	.01020	.01095	.01050	.00988	.01018
Stddev	.0082	.00193	.00014	.00414	.00009	.00126	.00019	.00017	.00014
%RSD	.78565	20.119	1.3493	.75937	.85237	11.487	1.8365	1.7114	1.3993
#1	1.0452	.01181	.01020	.55012	.01010	.01081	.01030	.01007	.01005
#2	1.0544	.00820	.00994	.54220	.01028	.00976	.01068	.00981	.01034
#3	1.0380	.00880	.01000	.54406	.01021	.01227	.01053	.00976	.01017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Zn
Units	mg/L
Avg	F .00776
Stddev	.00011
%RSD	1.4671
#1	.00766
#2	.00788
#3	.00775
Check ?	Chk Fail
Value	.01000
Range	-20.000%

Sample Name: MRLB2503 Acquired: 2/25/2016 18:37:07 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025017 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6975.6	107490.	183330.
Stddev	39.5	509.	1102.
%RSD	.56608	.47330	.60129
#1	6932.0	107850.	182300.
#2	6985.8	106910.	183190.
#3	7008.9	107710.	184490.

Sample Name: ICSA1 Acquired: 2/25/2016 18:40:13 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025018 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	376.58	.00777	.00006	.00055	.00007	F -.02600	.00059	493.85
Stddev	1.74	.00131	.00193	.00005	.00003	.00042	.00016	2.90
%RSD	.46247	16.918	3369.4	9.6676	36.344	1.6319	27.572	.58644
#1	378.34	.00803	.00049	.00050	.00010	-.02559	.00069	494.74
#2	376.53	.00634	-.00205	.00061	.00004	-.02598	.00068	496.20
#3	374.86	.00893	.00173	.00055	.00008	-.02644	.00040	490.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit						.01000		
Low Limit						-.01000		

Elem	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00143	.00057	.00109	185.70	.00000	.00360	189.21	.00133
Stddev	.00010	.00013	.00002	.40	.0011	.00071	1.04	.00026
%RSD	7.1203	22.117	2.2712	.21359	74248.	19.836	.54984	19.889
#1	.00138	.00071	.00111	186.07	-.00129	.00330	188.22	.00105
#2	.00136	.00051	.00109	185.28	.00068	.00308	190.29	.00157
#3	.00154	.00048	.00106	185.73	.00061	.00441	189.12	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo	Ni	K	Se	Ag	Na	Sr	Tl
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	-.00090	-.00068	.08021	-.00062	-.00006	.08936	.00001	-.00179
Stddev	.00014	.00042	.01192	.00276	.00003	.00569	.00010	.00106
%RSD	16.048	61.570	14.868	447.06	51.634	6.3637	1649.8	59.247
#1	-.00105	-.00022	.09258	-.00377	-.00007	.08320	.00011	-.00093
#2	-.00076	-.00104	.07924	.00139	-.00003	.09441	-.00007	-.00147
#3	-.00090	-.00079	.06879	.00053	-.00009	.09047	-.00003	-.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L
Avg	.00153	.00413	-.00036	.00253
Stddev	.00146	.00046	.00019	.00030
%RSD	95.080	11.013	52.545	11.868
#1	-.00013	.00440	-.00016	.00275
#2	.00216	.00439	-.00054	.00219
#3	.00258	.00361	-.00038	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				
Low Limit				

Sample Name: ICSA1 Acquired: 2/25/2016 18:40:13 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025018 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5270.9	102580.	155020.
Stddev	18.3	840.	1229.
%RSD	.34702	.81863	.79286
#1	5249.7	102900.	153810.
#2	5281.4	101630.	154990.
#3	5281.4	103210.	156260.

Sample Name: ICSAB1 Acquired: 2/25/2016 18:43:48 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025019 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	378.09	1.0573	1.0993	.50625	.50671	.47471	.98164	508.38	.50372	.50551
Stddev	1.55	.0069	.0041	.00176	.00143	.00271	.00297	3.59	.00023	.00115
%RSD	.41105	.65562	.37224	.34758	.28254	.57144	.30217	.70629	.04502	.22763
#1	376.51	1.0501	1.1014	.50549	.50579	.47211	.98450	504.28	.50372	.50447
#2	379.61	1.0639	1.1018	.50500	.50597	.47451	.97857	510.92	.50349	.50674
#3	378.14	1.0581	1.0946	.50826	.50836	.47752	.98185	509.96	.50394	.50532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.53701	187.47	1.0092	1.1841	191.87	.48072	1.0733	1.0407	84.051	1.0983
Stddev	.00192	.07	.0028	.0006	1.31	.00083	.0041	.0037	.330	.0054
%RSD	.35747	.03932	.28002	.05226	.68408	.17245	.37966	.35496	.39297	.49299
#1	.53504	187.54	1.0110	1.1848	190.36	.47977	1.0698	1.0380	83.738	1.0923
#2	.53710	187.40	1.0059	1.1840	192.48	.48104	1.0778	1.0391	84.018	1.0999
#3	.53888	187.47	1.0106	1.1836	192.76	.48134	1.0724	1.0449	84.396	1.1028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0958	84.405	.51084	.84331	1.0248	1.0121	.50480	1.0764
Stddev	.0036	.210	.00082	.00208	.0034	.0045	.00131	.0017
%RSD	.32764	.24901	.16054	.24628	.33127	.44329	.25906	.15316
#1	1.0921	84.171	.51156	.84523	1.0230	1.0092	.50359	1.0782
#2	1.0961	84.467	.50995	.84361	1.0287	1.0098	.50462	1.0750
#3	1.0993	84.578	.51102	.84110	1.0227	1.0172	.50619	1.0760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5135.8	99985.	151470.
Stddev	22.8	692.	810.
%RSD	.44332	.69180	.53483
#1	5127.3	100710.	150740.
#2	5118.5	99328.	151320.
#3	5161.6	99920.	152340.

Sample Name: CCV1 Acquired: 2/25/2016 18:46:50 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025020 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	106.36	1.5541	1.0801	2.0796	1.5699	2.5729	2.0614	81.414	2.6228
Stddev	.98	.0051	.0073	.0063	.0039	.0091	.0106	.445	.0117
%RSD	.92327	.33052	.67839	.30135	.24757	.35517	.51222	.54663	.44599
#1	106.28	1.5486	1.0844	2.0853	1.5702	2.5627	2.0654	80.915	2.6215
#2	107.38	1.5588	1.0842	2.0729	1.5659	2.5755	2.0695	81.556	2.6351
#3	105.42	1.5548	1.0716	2.0806	1.5736	2.5804	2.0495	81.770	2.6119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0146	2.5751	24.551	2.5523	F .55435	58.917	2.4376	2.7201	2.6586
Stddev	.0003	.0049	.033	.0024	.00049	.409	.0022	.0044	.0018
%RSD	.02461	.19122	.13401	.09514	.08892	.69411	.08920	.16063	.06700
#1	1.0147	2.5700	24.557	2.5523	.55392	58.467	2.4351	2.7151	2.6569
#2	1.0143	2.5754	24.580	2.5547	.55423	59.018	2.4387	2.7228	2.6604
#3	1.0147	2.5798	24.515	2.5499	.55489	59.266	2.4390	2.7225	2.6586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					.50000				
Range					10.000%				

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	64.034	F 1.1058	.51821	F 66.052	.51323	2.3379	.52831	.51721	1.5378
Stddev	.172	.0060	.00128	.194	.00153	.0051	.00014	.00248	.0006
%RSD	.26839	.53770	.24658	.29416	.29828	.21867	.02731	.47880	.03954
#1	63.884	1.1018	.51720	65.969	.51493	2.3369	.52831	.51870	1.5375
#2	63.997	1.1126	.51965	65.913	.51197	2.3435	.52817	.51435	1.5384
#3	64.221	1.1029	.51778	66.274	.51278	2.3334	.52846	.51858	1.5373
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		1.0000		60.000					
Range		10.000%		10.000%					

Elem	Zn
Units	mg/L
Avg	F 2.7873
Stddev	.0051
%RSD	.18308
#1	2.7894
#2	2.7910
#3	2.7815
Check ?	Chk Fail
Value	2.5000
Range	10.000%

Sample Name: CCV1 Acquired: 2/25/2016 18:46:50 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025020 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5767.6	102420.	163380.
Stddev	29.2	748.	1386.
%RSD	.50543	.72989	.84803
#1	5736.9	103220.	162300.
#2	5770.9	102290.	162910.
#3	5795.0	101740.	164950.

Sample Name: CCB1 Acquired: 2/25/2016 18:49:47 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025021 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .08281	.00109	.00061	.00077	.00037	.00564	.00045	.08535	.00061
Stddev	.00560	.00113	.00108	.00004	.00005	.00055	.00003	.00809	.00018
%RSD	6.7585	103.31	178.19	5.2882	13.396	9.7893	6.3014	9.4791	28.475
#1	.08901	.00195	.00134	.00076	.00032	.00620	.00048	.07691	.00041
#2	.08128	.00153	.00112	.00073	.00036	.00561	.00044	.08610	.00069
#3	.07813	-.00019	-.00064	.00081	.00042	.00510	.00042	.09304	.00074
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.03060								
Low Limit	-.03060								

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00028	.00068	.02441	.00053	.00100	.03106	.00072	.00088	.00069
Stddev	.00019	.00023	.00228	.00024	.00113	.01318	.00018	.00024	.00019
%RSD	68.394	34.406	9.3400	45.035	113.34	42.451	25.785	27.542	27.294
#1	.00022	.00086	.02685	.00026	-.00028	.02776	.00050	.00112	.00086
#2	.00050	.00075	.02234	.00066	.00186	.04558	.00083	.00088	.00073
#3	.00013	.00042	.02404	.00068	.00142	.01983	.00081	.00063	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.12628	.00053	.00022	.06929	.00014	.00066	.00045	.00033	.00060
Stddev	.00781	.00085	.00008	.00626	.00011	.00025	.00025	.00086	.00008
%RSD	6.1864	160.03	38.358	9.0321	78.736	37.286	54.857	264.58	12.902
#1	.12732	.00073	.00026	.07480	.00007	.00092	.00042	.00064	.00054
#2	.13352	.00126	.00028	.07058	.00008	.00061	.00072	.00099	.00069
#3	.11800	-.00040	.00012	.06249	.00026	.00044	.00023	-.00065	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zn
Units	mg/L
Avg	-.00166
Stddev	.00023
%RSD	13.957
#1	-.00140
#2	-.00176
#3	-.00183
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: CCB1 Acquired: 2/25/2016 18:49:47 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025021 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6805.4	105800.	180930.
Stddev	54.1	322.	781.
%RSD	.79486	.30465	.43166
#1	6752.8	106140.	180340.
#2	6802.4	105500.	180630.
#3	6860.9	105760.	181810.

Sample Name: CCV3 Acquired: 2/25/2016 19:37:44 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025034 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	97.166	1.4979	1.0300	1.9646	1.5148	2.4609	1.9822	79.569	2.5270	.99082
Stddev	.990	.0073	.0082	.0068	.0056	.0021	.0086	.247	.0065	.00151
%RSD	1.0190	.48538	.79299	.34705	.36625	.08366	.43569	.31011	.25854	.15195
#1	96.425	1.4987	1.0376	1.9578	1.5101	2.4585	1.9899	79.284	2.5310	.98964
#2	98.290	1.5048	1.0311	1.9714	1.5209	2.4621	1.9838	79.697	2.5306	.99029
#3	96.782	1.4903	1.0214	1.9646	1.5134	2.4621	1.9729	79.725	2.5195	.99251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.4950	23.972	2.4782	.53986	56.100	2.4863	2.5080	2.5731	61.071	1.0593
Stddev	.0069	.046	.0026	.00105	.344	.0107	.0028	.0047	.294	.0057
%RSD	.27740	.19226	.10353	.19403	.61249	.43088	.10992	.18387	.48118	.53665
#1	2.5008	23.928	2.4804	.53968	55.757	2.4765	2.5048	2.5698	60.733	1.0617
#2	2.4873	24.020	2.4754	.54099	56.444	2.4846	2.5097	2.5709	61.215	1.0634
#3	2.4967	23.967	2.4789	.53892	56.100	2.4977	2.5094	2.5785	61.264	1.0528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.49876	64.784	.48646	2.2828	.50477	.49083	1.4632	2.6221
Stddev	.00097	.159	.00064	.0097	.00050	.00118	.0008	.0030
%RSD	.19530	.24554	.13088	.42421	.09980	.23946	.05603	.11508
#1	.49974	64.611	.48574	2.2908	.50531	.48973	1.4623	2.6240
#2	.49874	64.923	.48668	2.2856	.50470	.49207	1.4639	2.6187
#3	.49779	64.818	.48696	2.2720	.50431	.49070	1.4635	2.6238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5989.0	105820.	169130.
Stddev	15.3	788.	1265.
%RSD	.25489	.74456	.74771
#1	5973.8	106680.	168090.
#2	5988.7	105140.	168770.
#3	6004.4	105620.	170540.

Sample Name: CCB3 Acquired: 2/25/2016 19:40:42 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025035 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.01720	.00088	.00195	.00067	.00025	.00273	.00019	.02928	.00039	.00022
Stddev	.00233	.00095	.00101	.00015	.00001	.00066	.00008	.00218	.00007	.00017
%RSD	13.521	107.91	51.847	21.733	3.4667	23.998	44.452	7.4594	17.233	78.700
#1	.01858	.00145	.00101	.00082	.00026	.00343	.00022	.02980	.00032	.00003
#2	.01850	.00140	.00182	.00067	.00025	.00264	.00025	.02689	.00045	.00036
#3	.01451	-.00022	.00303	.00052	.00025	.00213	.00009	.03116	.00040	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00025	.00231	.00046	.00063	.00975	.00196	.00066	.00052	.07894	-.00017
Stddev	.00017	.00044	.00094	.00094	.00256	.00032	.00010	.00020	.01962	.00019
%RSD	69.030	19.113	204.08	150.27	26.264	16.126	15.289	39.404	24.855	112.96
#1	.00036	.00206	.00154	.00041	.00717	.00233	.00074	.00071	.09680	.00002
#2	.00034	.00282	-.00014	-.00019	.00981	.00181	.00068	.00030	.05794	-.00036
#3	.00005	.00205	-.00002	.00166	.01229	.00175	.00054	.00054	.08209	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00017	.02381	-.00001	.00073	.00070	-.00007	.00040	-.00144
Stddev	.00005	.00640	.00003	.00022	.00046	.00053	.00017	.00016
%RSD	30.212	26.855	283.22	29.971	65.809	773.08	42.400	11.019
#1	.00021	.02562	-.00001	.00096	.00102	-.00062	.00057	-.00126
#2	.00019	.02911	-.00004	.00052	.00089	-.00004	.00024	-.00151
#3	.00011	.01671	.00002	.00071	.00017	.00045	.00038	-.00156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6831.2	105640.	180520.
Stddev	37.3	575.	1599.
%RSD	.54574	.54429	.88590
#1	6788.2	105430.	178670.
#2	6851.1	106290.	181360.
#3	6854.2	105190.	181520.

Sample Name: IPB034WB Acquired: 2/25/2016 19:43:50 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025036 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00286	.00047	.00045	.00020	.00009	.00151	-.00002	.05671	-.00003
Stddev	.00046	.00113	.00048	.00012	.00002	.00043	.00006	.00058	.00003
%RSD	16.057	242.27	106.33	57.518	21.205	28.128	279.63	1.0234	89.953
#1	.00280	.00135	.00079	.00015	.00009	.00185	-.00001	.05719	.00000
#2	.00244	-.00081	-.00010	.00033	.00008	.00165	.00003	.05687	-.00005
#3	.00335	.00086	.00067	.00012	.00011	.00104	-.00009	.05606	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00004	.00058	-.00404	.00033	.00024	F .00604	.00076	.00008	.00026
Stddev	.00016	.00019	.00141	.00091	.00052	.00652	.00014	.00010	.00015
%RSD	441.81	31.898	34.952	276.80	217.11	107.94	18.183	128.70	58.026
#1	.00010	.00080	-.00242	.00000	-.00029	.01347	.00088	-.00004	.00042
#2	.00016	.00047	-.00501	-.00037	.00026	.00127	.00081	.00016	.00023
#3	-.00015	.00048	-.00469	.00136	.00076	.00338	.00061	.00012	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.05000			
Low Limit						.05000			

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.02424	.00056	.00006	.01774	.00019	.00045	.00024	.00012	.00017
Stddev	.00369	.00083	.00008	.00626	.00010	.00014	.00024	.00039	.00003
%RSD	15.240	147.54	135.87	35.281	56.044	31.966	102.14	317.12	16.632
#1	.02169	.00148	.00006	.01865	.00011	.00055	-.00003	-.00022	.00018
#2	.02256	-.00012	.00013	.02350	.00015	.00050	.00029	.00055	.00019
#3	.02848	.00032	-.00002	.01108	.00031	.00028	.00045	.00004	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zn
Units	mg/L
Avg	-.00015
Stddev	.00028
%RSD	178.88
#1	-.00047
#2	-.00004
#3	.00004
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: IPB034WB Acquired: 2/25/2016 19:43:50 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025036 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6872.0	106010.	181840.
Stddev	53.1	931.	1609.
%RSD	.77279	.87837	.88499
#1	6815.0	106890.	180430.
#2	6880.7	105030.	181490.
#3	6920.1	106110.	183590.

Sample Name: IPB034WL Acquired: 2/25/2016 19:46:58 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025037 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	5.2226	2.6343	.53627	.50710	.51178	.51596	.51890	54.182	.52005
Stddev	.0155	.0064	.00225	.00171	.00270	.00120	.00225	.336	.00064
%RSD	.29630	.24222	.42036	.33802	.52694	.23354	.43365	.62055	.12293
#1	5.2365	2.6270	.53380	.50596	.50883	.51511	.51631	53.817	.51979
#2	5.2254	2.6370	.53681	.50908	.51412	.51734	.52022	54.248	.52078
#3	5.2059	2.6389	.53821	.50627	.51240	.51544	.52019	54.480	.51958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.51076	.51434	5.0591	.51317	F .00013	48.040	.49082	.53114	.53401
Stddev	.00030	.00092	.0138	.00045	.00016	.437	.00280	.00123	.00045
%RSD	.05948	.17939	.27184	.08757	125.65	.90889	.57019	.23071	.08340
#1	.51043	.51493	5.0450	.51368	-.00004	47.536	.48804	.53249	.53449
#2	.51103	.51328	5.0598	.51283	.00014	48.299	.49079	.53085	.53392
#3	.51083	.51482	5.0724	.51301	.00028	48.285	.49364	.53009	.53361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					.50000				
Range					-15.200%				

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	52.432	.54963	.51586	54.018	.50226	.47932	.52777	.51667	.50876
Stddev	.296	.00122	.00040	.193	.00055	.00175	.00186	.00214	.00173
%RSD	.56540	.22131	.07772	.35717	.10937	.36523	.35271	.41407	.34001
#1	52.116	.54857	.51540	53.830	.50167	.47731	.52979	.51434	.50756
#2	52.473	.55096	.51604	54.010	.50234	.48047	.52613	.51854	.50797
#3	52.705	.54936	.51613	54.215	.50276	.48019	.52740	.51713	.51074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Zn
Units	mg/L
Avg	.53952
Stddev	.00097
%RSD	.18065
#1	.53882
#2	.53911
#3	.54064
Check ?	Chk Pass
Value	
Range	

Sample Name: IPB034WL Acquired: 2/25/2016 19:46:58 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025037 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5915.5	103820.	165080.
Stddev	61.0	1338.	823.
%RSD	1.0304	1.2883	.49845
#1	5848.2	105360.	164430.
#2	5931.4	103210.	164810.
#3	5967.0	102900.	166010.

Sample Name: CCV4 Acquired: 2/25/2016 20:02:08 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025042 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	98.453	1.5227	1.0263	2.0193	1.5289	2.4227	1.9440	77.481	2.4279	.99594
Stddev	.651	.0113	.0021	.0083	.0097	.0046	.0071	.769	.0044	.00011
%RSD	.66147	.73975	.19956	.41131	.63565	.19181	.36673	.99268	.17957	.01106
#1	98.634	1.5329	1.0254	2.0124	1.5180	2.4173	1.9461	76.644	2.4244	.99589
#2	98.996	1.5245	1.0286	2.0285	1.5366	2.4249	1.9498	77.641	2.4328	.99607
#3	97.731	1.5106	1.0248	2.0171	1.5320	2.4258	1.9360	78.157	2.4267	.99587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.4536	22.917	2.5048	.53743	55.377	2.4026	2.5613	2.5974	60.341	1.0663
Stddev	.0041	.079	.0061	.00157	.734	.0158	.0054	.0034	.400	.0082
%RSD	.16786	.34542	.24373	.29277	1.3259	.65593	.21145	.12913	.66213	.76880
#1	2.4526	22.875	2.5118	.53924	54.530	2.3849	2.5675	2.6010	59.892	1.0744
#2	2.4501	23.009	2.5005	.53667	55.776	2.4075	2.5587	2.5970	60.472	1.0664
#3	2.4581	22.868	2.5020	.53638	55.826	2.4152	2.5576	2.5943	60.658	1.0580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.48829	64.039	.48608	2.2834	.51350	.50137	1.4376	2.5986
Stddev	.00075	.207	.00041	.0108	.00160	.00223	.0022	.0035
%RSD	.15342	.32363	.08473	.47218	.31195	.44452	.15682	.13420
#1	.48784	63.815	.48607	2.2907	.51526	.49882	1.4356	2.5985
#2	.48788	64.079	.48650	2.2884	.51310	.50235	1.4401	2.5952
#3	.48916	64.224	.48568	2.2710	.51213	.50294	1.4371	2.6022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5756.9	106550.	166750.
Stddev	65.2	1419.	2142.
%RSD	1.1323	1.3317	1.2846
#1	5686.6	108190.	164740.
#2	5768.9	105690.	166510.
#3	5815.3	105780.	169000.

Sample Name: CCB4 Acquired: 2/25/2016 20:05:09 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025043 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .04005	.00087	-.00053	.00071	.00056	.00389	.00067	.05096	.00094
Stddev	.00400	.00076	.00027	.00007	.00005	.00032	.00006	.00123	.00009
%RSD	9.9959	86.699	51.412	10.148	8.0886	8.1427	9.2344	2.4194	9.3072
#1	.04220	.00168	-.00027	.00071	.00052	.00421	.00075	.04967	.00087
#2	.04251	.00077	-.00051	.00079	.00054	.00389	.00064	.05110	.00104
#3	.03543	.00017	-.00081	.00064	.00061	.00357	.00064	.05212	.00092
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.03000								
Low Limit	-.03000								

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00035	.00087	-.00137	.00086	.00102	.02501	.00103	.00121	.00102
Stddev	.00011	.00010	.00075	.00040	.00081	.00415	.00015	.00013	.00012
%RSD	32.358	11.148	55.018	46.227	78.764	16.586	15.099	10.454	11.565
#1	.00042	.00093	-.00127	.00049	.00041	.02179	.00095	.00136	.00115
#2	.00041	.00093	-.00066	.00128	.00194	.02969	.00093	.00115	.00093
#3	.00022	.00076	-.00216	.00080	.00072	.02354	.00120	.00113	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .10249	-.00049	.00032	.05943	.00015	.00170	.00020	.00031	.00072
Stddev	.01895	.00019	.00015	.00529	.00002	.00048	.00038	.00073	.00010
%RSD	18.489	38.355	46.789	8.8958	14.206	28.115	195.96	233.34	13.504
#1	.10353	-.00059	.00016	.06546	.00017	.00183	.00064	-.00041	.00081
#2	.08305	-.00027	.00047	.05719	.00013	.00116	-.00005	.00030	.00062
#3	.12091	-.00061	.00034	.05563	.00014	.00209	.00000	.00105	.00074
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.10000								
Low Limit	-.10000								

Elem	Zn
Units	mg/L
Avg	-.00069
Stddev	.00004
%RSD	5.7583
#1	-.00069
#2	-.00065
#3	-.00073
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: CCB4 Acquired: 2/25/2016 20:05:09 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025043 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6713.5	106820.	182820.
Stddev	38.0	1017.	810.
%RSD	.56597	.95255	.44293
#1	6673.3	107850.	181940.
#2	6718.5	105820.	182970.
#3	6748.8	106800.	183540.

Sample Name: TXB005SB Acquired: 2/25/2016 20:08:18 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025044 Type: Anaylst: THuang
Comment: TCLP

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.05388	.00145	.00081	.00117	.00018	.00740	.00034	.11442	.00086
Stddev	.00341	.00053	.00035	.00013	.00009	.00027	.00010	.00483	.00010
%RSD	6.3294	36.409	42.900	11.288	52.983	3.7148	30.278	4.2191	12.105
#1	.05075	.00098	.00042	.00112	.00010	.00762	.00038	.11040	.00085
#2	.05338	.00201	.00093	.00107	.00016	.00748	.00042	.11309	.00098
#3	.05752	.00134	.00109	.00132	.00028	.00709	.00022	.11978	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	-.00005	.00276	.00012	.00058	.00111	.03739	.00080	.00074	.00079
Stddev	.00027	.00019	.00094	.00025	.00084	.00725	.00032	.00018	.00009
%RSD	523.09	7.0241	803.27	43.155	76.195	19.384	40.162	24.454	11.603
#1	.00006	.00255	-.00052	.00066	.00073	.03161	.00047	.00092	.00068
#2	-.00035	.00293	-.00033	.00030	.00052	.03504	.00081	.00074	.00085
#3	.00015	.00281	.00119	.00078	.00207	.04552	.00111	.00056	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.16952	.00136	-.00004	F 299.68	.00077	-.00152	.00108	.00027	.00054
Stddev	.03099	.00159	.00019	2.19	.00011	.00090	.00036	.00045	.00011
%RSD	18.283	117.43	478.54	.73032	14.441	59.521	32.987	164.81	21.221
#1	.14091	.00298	.00010	301.96	.00065	-.00102	.00070	-.00024	.00045
#2	.16519	.00130	.00004	299.47	.00080	-.00098	.00115	.00060	.00067
#3	.20245	-.00021	-.00026	297.60	.00087	-.00256	.00140	.00045	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.50000					
Low Limit				-10.000					

Elem	Zn
Units	mg/L
Avg	.00222
Stddev	.00010
%RSD	4.6628
#1	.00210
#2	.00229
#3	.00227
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: TXB005SB Acquired: 2/25/2016 20:08:18 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025044 Type: Anaylst: THuang
Comment: TCLP

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5742.9	104710.	163750.
Stddev	48.3	1053.	1142.
%RSD	.84030	1.0060	.69728
#1	5696.4	105100.	162670.
#2	5739.7	103520.	163620.
#3	5792.7	105520.	164950.

Sample Name: B094-02M Acquired: 2/25/2016 20:24:00 Type: Unk
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025049 Type: Anaylst: THuang
Comment: TCLP

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	30.311	2.6216	.55987	.83735	.50035	.53035	.49569	99.540	.52219
Stddev	.139	.0051	.00054	.00272	.00162	.00178	.00299	.140	.00182
%RSD	.45806	.19533	.09696	.32427	.32399	.33645	.60221	.14105	.34855
#1	30.387	2.6158	.56048	.83431	.49862	.52860	.49240	99.433	.52011
#2	30.151	2.6253	.55944	.83955	.50183	.53028	.49646	99.699	.52350
#3	30.396	2.6238	.55969	.83818	.50060	.53216	.49822	99.489	.52296

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.51832	.52885	17.369	.52033	.02120	52.411	.72741	.54103	.54817
Stddev	.00122	.00314	.043	.00194	.00041	.140	.00240	.00120	.00029
%RSD	.23583	.59334	.24932	.37369	1.9547	.26625	.32947	.22224	.05353
#1	.51949	.52641	17.356	.52230	.02098	52.302	.73018	.54221	.54818
#2	.51842	.52777	17.417	.51841	.02094	52.569	.72603	.54108	.54846
#3	.51705	.53239	17.333	.52027	.02168	52.364	.72602	.53981	.54787

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	61.750	.58641	.52954	F 416.05	.73609	.42723	.52193	F 1.2791	.53036
Stddev	.230	.00505	.00334	2.08	.00054	.00181	.00233	.0128	.00072
%RSD	.37251	.86078	.62991	.50004	.07388	.42436	.44557	1.0010	.13575
#1	61.510	.58090	.52670	418.45	.73552	.42526	.52448	1.2930	.52957
#2	61.771	.58752	.52872	414.74	.73616	.42882	.52138	1.2762	.53098
#3	61.969	.59081	.53321	414.95	.73660	.42762	.51993	1.2679	.53052

Elem	Zn
Units	mg/L
Avg	.59200
Stddev	.00109
%RSD	.18450
#1	.59182
#2	.59101
#3	.59317

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5389.6	108320.	159680.
Stddev	57.7	543.	577.
%RSD	1.0704	.50097	.36119
#1	5329.8	108120.	159140.
#2	5394.2	107900.	159610.
#3	5444.9	108930.	160290.

Sample Name: MRLB2504 Acquired: 2/25/2016 20:30:07 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025051 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.20545	.10313	.00962	.01036	.01008	.09698	.01030	1.1099	.01019
Stddev	.00108	.00076	.00142	.00007	.00015	.00008	.00006	.0056	.00014
%RSD	.52720	.73662	14.774	.66969	1.4538	.08642	.60478	.50620	1.3340
#1	.20657	.10344	.01104	.01028	.00993	.09691	.01024	1.1041	.01030
#2	.20537	.10369	.00820	.01039	.01010	.09695	.01030	1.1103	.01004
#3	.20440	.10227	.00963	.01041	.01022	.09707	.01036	1.1153	.01024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.01004	.01066	.18041	.01050	.01094	.97228	.01006	.01011	.01049
Stddev	.00007	.00001	.00048	.00013	.00039	.02291	.00016	.00004	.00021
%RSD	.74121	.13559	.26780	1.2020	3.5331	2.3565	1.5715	.36994	2.0395
#1	.00997	.01065	.17987	.01037	.01124	.94595	.01002	.01015	.01045
#2	.01012	.01067	.18080	.01052	.01050	.98326	.01024	.01008	.01030
#3	.01003	.01065	.18056	.01062	.01107	.98764	.00993	.01011	.01073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.1122	.01036	.01014	F 1.2311	.01037	.01098	.10509	.01023	.01015
Stddev	.0127	.00121	.00008	.0072	.00003	.00033	.00034	.00021	.00012
%RSD	1.1399	11.627	.83745	.58069	.32958	3.0482	.32645	2.0882	1.2259
#1	1.0979	.01013	.01008	1.2356	.01039	.01076	.10532	.01047	.01022
#2	1.1165	.01167	.01011	1.2349	.01033	.01136	.10525	.01017	.01001
#3	1.1221	.00929	.01024	1.2229	.01039	.01081	.10469	.01006	.01023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				1.0000					
Range				20.000%					

Elem	Zn
Units	mg/L
Avg	.01823
Stddev	.00022
%RSD	1.2082
#1	.01800
#2	.01826
#3	.01843
Check ?	Chk Pass
Value	
Range	

Sample Name: MRLB2504 Acquired: 2/25/2016 20:30:07 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025051 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6694.4	109920.	181710.
Stddev	54.3	1013.	1531.
%RSD	.81123	.92184	.84257
#1	6638.0	111090.	180200.
#2	6698.8	109320.	181660.
#3	6746.3	109350.	183260.

Sample Name: MRLB2505 Acquired: 2/25/2016 20:33:14 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025052 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.20765	.05061	.01125	.00509	.00406	.09640	.00505	.54071	.01026
Stddev	.00047	.00107	.00128	.00011	.00006	.00031	.00004	.00335	.00013
%RSD	.22788	2.1223	11.386	2.1862	1.3832	.31664	.88407	.61979	1.2279
#1	.20820	.04987	.01137	.00498	.00402	.09636	.00505	.53699	.01012
#2	.20740	.05184	.00992	.00520	.00404	.09611	.00501	.54349	.01037
#3	.20735	.05012	.01247	.00508	.00413	.09672	.00510	.54165	.01029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.01012	.01021	.08644	.00317	.10362	.19701	.00533	.01014	.01058
Stddev	.00032	.00021	.00151	.00012	.00087	.00331	.00025	.00012	.00011
%RSD	3.1842	2.0511	1.7475	3.9451	.83554	1.6820	4.6396	1.2080	1.0356
#1	.01014	.01045	.08470	.00309	.10388	.19441	.00517	.01029	.01047
#2	.00980	.01005	.08740	.00331	.10265	.20074	.00520	.01008	.01069
#3	.01044	.01015	.08723	.00310	.10432	.19588	.00561	.01007	.01058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0581	.01058	.00988	F .64066	.01030	.01088	.01076	.01043	.01025
Stddev	.0089	.00145	.00009	.00558	.00001	.00057	.00016	.00035	.00007
%RSD	.84007	13.672	.90875	.87106	.14416	5.2167	1.5271	3.3943	.66988
#1	1.0681	.01009	.00983	.63719	.01029	.01026	.01057	.01044	.01027
#2	1.0552	.01221	.00999	.63770	.01029	.01101	.01082	.01007	.01030
#3	1.0510	.00945	.00984	.64710	.01032	.01137	.01088	.01077	.01017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.50000					
Range				20.000%					

Elem	Zn
Units	mg/L
Avg	F .00769
Stddev	.00034
%RSD	4.3829
#1	.00798
#2	.00732
#3	.00777
Check ?	Chk Fail
Value	.01000
Range	-20.000%

Sample Name: MRLB2505 Acquired: 2/25/2016 20:33:14 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025052 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6767.4	109890.	183660.
Stddev	58.0	1356.	882.
%RSD	.85684	1.2337	.48040
#1	6707.2	111460.	182810.
#2	6772.1	109070.	183610.
#3	6822.9	109150.	184570.

Sample Name: CCV5 Acquired: 2/25/2016 20:36:21 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025053 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	97.329	1.5196	1.0263	1.9739	1.5009	2.4326	1.9281	77.756	2.4435	.99586
Stddev	.549	.0089	.0059	.0034	.0024	.0105	.0087	.575	.0093	.00245
%RSD	.56403	.58724	.57618	.17036	.16278	.42995	.44923	.73915	.38003	.24631
#1	97.329	1.5194	1.0265	1.9778	1.4982	2.4208	1.9186	77.099	2.4368	.99868
#2	97.877	1.5287	1.0321	1.9721	1.5018	2.4406	1.9354	78.003	2.4541	.99428
#3	96.779	1.5108	1.0202	1.9718	1.5028	2.4365	1.9304	78.165	2.4396	.99462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.4796	23.148	2.5008	.53599	54.438	2.4151	2.5590	2.5886	60.156	1.0652
Stddev	.0088	.078	.0075	.00146	.472	.0117	.0100	.0046	.316	.0054
%RSD	.35378	.33822	.30155	.27198	.86709	.48306	.38980	.17705	.52477	.50506
#1	2.4695	23.072	2.5095	.53759	53.896	2.4047	2.5702	2.5939	59.793	1.0595
#2	2.4848	23.228	2.4966	.53562	54.661	2.4277	2.5555	2.5861	60.315	1.0701
#3	2.4847	23.145	2.4963	.53475	54.758	2.4129	2.5512	2.5858	60.360	1.0659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.49166	63.650	.48405	2.2629	.51409	.49164	1.4481	2.5936
Stddev	.00209	.184	.00151	.0097	.00331	.00016	.0028	.0018
%RSD	.42452	.28954	.31214	.42844	.64322	.03356	.19401	.07043
#1	.48948	63.440	.48530	2.2567	.51776	.49148	1.4452	2.5943
#2	.49364	63.723	.48447	2.2741	.51319	.49181	1.4508	2.5949
#3	.49185	63.787	.48237	2.2580	.51133	.49164	1.4484	2.5915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5801.3	109600.	169060.
Stddev	73.6	1409.	1363.
%RSD	1.2678	1.2859	.80620
#1	5724.3	111210.	168050.
#2	5808.9	108620.	168510.
#3	5870.8	108960.	170610.

Sample Name: CCB5 Acquired: 2/25/2016 20:39:20 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025054 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .03104	.00130	.00162	.00064	.00040	.00338	.00047	.04113	.00070
Stddev	.00231	.00091	.00162	.00000	.00004	.00056	.00005	.00422	.00006
%RSD	7.4508	70.310	99.795	.62735	10.781	16.443	10.017	10.259	7.9102
#1	.03322	.00235	.00345	.00064	.00038	.00395	.00051	.03680	.00076
#2	.03127	.00088	.00104	.00064	.00038	.00337	.00042	.04135	.00071
#3	.02861	.00067	.00037	.00064	.00045	.00283	.00048	.04523	.00064
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.03000								
Low Limit	-.03000								

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00025	.00156	-.00493	.00081	.00046	.01453	.00090	.00104	.00073
Stddev	.00007	.00014	.00359	.00057	.00065	.01036	.00009	.00014	.00013
%RSD	27.204	9.0617	72.895	70.560	141.39	71.325	10.020	12.955	18.245
#1	.00030	.00169	-.00601	.00053	-.00029	.00256	.00086	.00107	.00082
#2	.00028	.00141	-.00786	.00147	.00088	.02057	.00100	.00090	.00079
#3	.00017	.00156	-.00092	.00044	.00078	.02045	.00084	.00116	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .11431	-.00029	.00027	F .11706	.00015	.00134	.00019	.00019	.00064
Stddev	.01119	.00054	.00010	.00469	.00005	.00055	.00042	.00028	.00005
%RSD	9.7902	188.01	37.355	4.0064	32.867	41.153	218.54	150.65	8.2462
#1	.12619	-.00087	.00036	.11986	.00014	.00167	-.00029	.00037	.00058
#2	.10396	.00020	.00016	.11165	.00010	.00070	.00039	-.00014	.00066
#3	.11278	-.00020	.00028	.11968	.00020	.00163	.00047	.00033	.00068
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.10000			.10000					
Low Limit	-.10000			-.10000					

Elem	Zn
Units	mg/L
Avg	-.00072
Stddev	.00022
%RSD	30.329
#1	-.00048
#2	-.00075
#3	-.00091
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: CCB5 Acquired: 2/25/2016 20:39:20 Type: QC
Method: 16B6010(v41) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B025054 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6698.4	108420.	181720.
Stddev	51.1	778.	1192.
%RSD	.76241	.71730	.65613
#1	6639.6	109060.	180490.
#2	6724.5	107550.	181820.
#3	6731.2	108640.	182860.

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/29/16 12:19

End Date: 2/29/16 14:54

SOP #	Rev. #
☑ EMAX-6010	7
☑ EMAX-6010C	1
☐ EMAX-200.7	4
☐ EMAX-	

Comments:

Book #: AD8-038

Instrument No.: D8

Analytical Batch: 1D8B028

Analytical Sequence: S-16B6010(V46)

Method File: 16B6010(V46)

Database: Emax21

Micropipette ID: ☑ 439340047

Micropipette ID: ☑ ICP-DOE4

Micropipette ID: ☑ 242780103

Micropipette ID: ☑ 439360087

Micropipette ID: ☐

	STANDARDS ID		STANDARDS ID
S0	SM1B016-76-04	S26	SM1B016-7504
S1	MA	S27	7601
S2		S28	6305
S3		S29	6106
S4		S30	7303
S5		S31	7304
S6		ICV	7401
S7		CCV	7605
S8		ICSA	7602
S9		ICSAB	7603
S10		CRI/MRL	6905
S11		CRI/MRL	7305
S12		Internal Standard	SM1A013-0928
S16		Post-Spike 1	0919
S17		Post-Spike 2	0920
S18		Post-Spike 3	0921
S20	SM1B016-61-05		
S21	6601		
S22	7502		
S23	7503		
S24	6801		
S25	6802		

Analyzed By: TH

Date: 2/29/16

SEQUENCE FILE : ID8B028

4-18	19-33	34-43	44-53	54-63
LFID	LSID	TIME	DATE	DF
ID8B028001	Blank	12:19	02/29/16	1.000
ID8B028002	S20	12:23	02/29/16	1.000
ID8B028003	S21	12:26	02/29/16	1.000
ID8B028004	S22	12:29	02/29/16	1.000
ID8B028005	S23	12:32	02/29/16	1.000
ID88028006	S24	12:35	02/29/16	1.000
ID8B028007	S25	12:38	02/29/16	1.000
ID8B028008	S26	12:42	02/29/16	1.000
ID8B028009	S27	12:45	02/29/16	1.000
IDBB028010	S28	12:48	02/29/16	1.000
ID8B028011	S29	12:51	02/29/16	1.000
ID8B028012	S30	12:54	02/29/16	1.000
ID8B028013	S31	12:57	02/29/16	1.000
ID8B028014	ICV	13:00	02/29/16	1.000
ID8B028015	ICB	13:03	02/29/16	1.000
ID8B028016	ZZZZ	13:07	02/29/16	1.000
ID8B028017	ICSA1	13:15	02/29/16	1.000
ID8B028018	ICSAB1	13:18	02/29/16	1.000
ID8B028019	MRLB2901	13:25	02/29/16	1.000
ID8B028020	MRLB2902	13:28	02/29/16	1.000
ID8B028021	CCV1	13:31	02/29/16	1.000
ID8B028022	CCB1	13:34	02/29/16	1.000
ID8B028023	IPB039WB	13:38	02/29/16	1.000
ID8B028024	IPB039WL	13:41	02/29/16	1.000
ID8B028025	IPB039WC	13:43	02/29/16	1.000
ID8B028026	TXB008SB TCLP	13:46	02/29/16	1.000
ID8B028027	B105-02A	13:50	02/29/16	1.000
ID8B028028	B105-02	13:53	02/29/16	1.000
ID8B028029	B105-02J	13:56	02/29/16	5.000
ID8B028030	B105-02M	13:59	02/29/16	1.000
ID8B028031	B105-02S	14:05	02/29/16	1.000
ID8B028032	B105-05	14:08	02/29/16	1.000
ID8B028033	CCV2	14:11	02/29/16	1.000
ID8B028034	CCB2	14:14	02/29/16	1.000
ID8B028035	MRLB2903	14:17	02/29/16	1.000
ID8B028036	B094-02D TCLP	14:21	02/29/16	1.000
ID8B028037	B094-02A	14:31	02/29/16	1.000
ID8B028038	B094-02R	14:34	02/29/16	1.000
ID8B028039	B094-02J	14:37	02/29/16	5.000
ID8B028040	Blank	14:41	02/29/16	1.000
ID8B028041	MRLB2904	14:44	02/29/16	1.000
ID8B028042	MRLB2905	14:48	02/29/16	1.000
ID8B028043	CCV3	14:51	02/29/16	1.000
ID8B028044	CCB3	14:54	02/29/16	1.000

VERSON : 16A UNIT : % SUMMARY of ICV and CCV : ID8B028 DATE : 02/29/16 INST : EMAXTID8

ANALYTE	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S27	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S31	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	103	104	103	101	105	101	100	104	103	101	103	98	101	109	97	102	103	106	98	106	101	110	96	95	104	101	101	106
ICB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ZZZZ	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA1	96	----	----	----	----	----	----	99	----	----	----	95	----	----	98	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSAB1	94	106	108	102	103	92	97	101	101	99	105	96	100	117	97	97	107	103	110	108	110	116	103	84	101	102	102	106
MRLB2901	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2902	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	102	101	101	99	103	99	99	102	101	98	101	96	99	107	94	98	102	103	98	105	99	108	96	93	100	100	99	104
CCB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB039WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB039WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB039WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TXB008SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	101	102	104	101	104	101	101	104	103	96	99	97	99	107	95	99	102	103	100	107	102	111*	100	94	99	101	100	104
CCB2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2903	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2904	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2905	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	107	102	105	103	104	103	102	103	104	97	102	97	100	109	95	97	107	105	102	107	103	111*	102	94	100	102	101	106
CCB3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

VERSON : 16A UNIT : UG/L SUMMARY of CALIBRATION BLANKS : ID88028 (WATER) DATE : 02/29/16 INST : EMAXTID8

ANALYTE	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S27	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S31	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICB	35.4	1.04	-.010	.620	.460	7.27	.540	47.8	.730	.040	.910	15.0	.450	-.040	23.2	1.04	.870	.690	127	2.19	.190	46.7	.150	.870	.330	-.260	.370	5.32
ZZZZ	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ICSA1	----	7.33	-2.65	.480	.030	-48.1	1.02	----	1.24	.060	1.31	----	2.36	18.5	----	1.47	-1.09	-1.09	68.4	.380	-.050	93.9	.040	-2.53	.120	3.93	-.510	3.86
ICSAB1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2901	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2902	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB1	48.2	1.09	.110	.480	.470	4.81	.700	59.2	1.03	.140	.910	14.9	.330	-1.10	25.2	.810	1.12	.750	88.5	1.27	.270	52.0	.080	.810	-.560	-.270	.600	1.28
IPB039WB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB039WL	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
IPB039WC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TXB008SB	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02M	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-02S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B105-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB2	26.3	.410	-.290	.480	.400	4.05	.420	66.3	.590	.110	.440	7.39	-.610	-.100	13.9	.790	.770	.420	142	1.76	.110	198	.170	.740	-.470	.090	.450	.670
MRLB2903	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B094-02J	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BLANK	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2904	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MRLB2905	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCV3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
CCB3	36.3	.790	.090	.650	.500	5.82	.410	43.3	.640	-.050	.920	4.52	-.040	-.030	5.79	.700	.850	.380	96.7	1.26	.060	107	.130	.410	.270	-.410	.430	.390

QC limit of each parameter are listed in a table attached next to all the ICP check forms

* : Out of QC Limit

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Date File	Type	Anaylst	CorrFact	Check	Check Table	Fail Action
1	0	0	0	0	Unk	S0		ID8B028001		THuang	1	☒	unk	---
2	0	0	0	0	Unk	S20		ID8B028002		THuang	1	☒	unk	---
3	0	0	0	0	Unk	S21		ID8B028003		THuang	1	☒	unk	---
4	0	0	0	0	Unk	S22		ID8B028004		THuang	1	☒	unk	---
5	0	0	0	0	Unk	S23		ID8B028005		THuang	1	☒	unk	---
6	0	0	0	0	Unk	S24		ID8B028006		THuang	1	☒	unk	---
7	0	0	0	0	Unk	S25		ID8B028007		THuang	1	☒	unk	---
8	0	0	0	0	Unk	S26		ID8B028008		THuang	1	☒	unk	---
9	0	0	0	0	Unk	S27		ID8B028009		THuang	1	☒	unk	---
10	0	0	0	0	Unk	S28		ID8B028010		THuang	1	☒	unk	---
11	0	0	0	0	Unk	S29		ID8B028011		THuang	1	☒	unk	---
12	0	0	0	0	Unk	S30		ID8B028012		THuang	1	☒	unk	---
13	0	0	0	0	Unk	S31		ID8B028013		THuang	1	☒	unk	---
14	1	2	1	1	QC	ICV		ID8B028014		THuang	1	☒	CCV	None
15	2	2	2	1	QC	ICB		ID8B028015		THuang	1	☒	3XIDL	None
16	5	2	5	1	QC	ZZZZ		ID8B028016		THuang	1	☒	ICSA	None
17	5	2	5	1	QC	ICSA1		ID8B028017		THuang	1	☒	ICSA-DoD	None
18	6	2	6	1	QC	ICSAB1		ID8B028018		THuang	1	☒	ICSAB	None
19	3	2	3	1	QC	MRLB2901		ID8B028019		THuang	1	☒	MRL-EMAX	None
20	4	2	4	1	QC	MRLB2902		ID8B028020		THuang	1	☒	MRL-AFCEE	None
21	7	2	7	1	QC	CCV1		ID8B028021		THuang	1	☒	CCV	None
22	8	2	8	1	QC	CCB1		ID8B028022		THuang	1	☒	LOD	None
23	9	2	9	1	QC	IPB039WB		ID8B028023		THuang	1	☒	1/2LOQ	None
24	10	2	10	1	QC	IPB039WL		ID8B028024		THuang	1	☒	LCS	None
25	11	2	11	1	QC	IPB039WC		ID8B028025		THuang	1	☒	LCS	None
26	12	2	12	1	QC	TXB008SB	TCLP	ID8B028026		THuang	1	☒	1/2LOQ	None
27	13	2	1	2	Unk	B105-02A	TCLP	ID8B028027		THuang	1	☒	unk6010C	---
28	14	2	2	2	Unk	B105-02	TCLP	ID8B028028		THuang	1	☒	unk6010C	---
29	15	2	3	2	Unk	B105-02J	TCLP	ID8B028029		THuang	1	☒	unk6010C	---
30	16	2	4	2	Unk	B105-02M	TCLP	ID8B028030		THuang	1	☒	unk6010C	---
31	17	2	5	2	Unk	B105-02S	TCLP	ID8B028031		THuang	1	☒	unk6010C	---
32	18	2	6	2	Unk	B105-05	TCLP	ID8B028032		THuang	1	☒	unk6010C	---
33	19	2	7	2	QC	CCV2		ID8B028033		THuang	1	☒	CCV	None
34	20	2	8	2	QC	CCB2		ID8B028034		THuang	1	☒	LOD	None
35	22	2	10	2	QC	MRLB2903		ID8B028035		THuang	1	☒	MRL-EMAX	None
36	21	2	9	2	Unk	B094-02D	TCLP	ID8B028036		THuang	1	☒	unk6010C	---
37	99	3	3	4	Unk	B094-02A	TCLP	ID8B028037		THuang	1	☒	unk6010C	---
38	100	3	4	4	Unk	B094-02R	TCLP	ID8B028038		THuang	1	☒	unk6010C	---
39	101	3	5	4	Unk	B094-02J	TCLP	ID8B028039		THuang	1	☒	unk6010C	---
40	94	3	10	3	Blank	Blank		ID8B028040		THuang	1	☐		---
41	95	3	11	3	QC	MRLB2904		ID8B028041		THuang	1	☒	MRL-EMAX	None
42	96	3	12	3	QC	MRLB2905		ID8B028042		THuang	1	☒	MRL-AFCEE	None
43	97	3	1	4	QC	CCV3		ID8B028043		THuang	1	☒	CCV	None
44	98	3	2	4	QC	CCB3		ID8B028044		THuang	1	☒	3XIDL	None

Status

Revision	46	
Date Created	8/14/2006 16:36:29	by admin
Date Modified	2/29/2016 12:08:36	by admin
Date Calibrated	2/29/2016 13:00:40	
Current Status	by admin	
Number of Elements	31	
Number of Wavelengths	33	
Calibration Type	External	
Notes:		

Analysis Preferences

Sample Options	# Repeats:	3			
	Delay Time:	0.0 seconds			
	Sample Flush Time:	19 seconds			
	Analysis mode	Speed			
Source	Sample Introduction	Nebulizer			
	Plasma View:	Line Selection			
Analysis Maximum Integration Times (sec)	Low WL Range	Axial	15	Radial	15
	High WL Range:	Axial	10	Radial	5
Calibration Mode	Concentration				
Trailing Full Frame Options	Intelli-Frame:		No		
	Max Integration Time (sec):		30		
	WL Range:		Low		
	View:		Axial		
	Auto-Increment Sample Names:		Yes		
	Use Sample Weight Corrections:		No		

Source Settings

Nebulizer Pump	Flush Pump Rate (rpm):	67	
	Analysis Pump Rate (rpm):	13	
	Pump Relaxation Time (sec):	2	
	Pump Tubing Type:	Tygon Orange/White	
	RF Power:	1150	W
	Nebulizer Flow:	0.55	L/min
	Auxiliary Gas:	0.5	L/min

Automated Output

Option	Unknowns	QC Std	Blanks	Standards	Recoveries	Duplicate	Time Scan
Save results to database	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Print results	No	No	No	No	No	No	No
Export results to comma	Yes	Yes	Yes	Yes	Yes	Yes	Yes

INDX	LSID	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	LSID
1	Blank	.00059	.00002	-.00001	.00017	.00010	.00045	-.00001	.00018	-.00007	-.00082	Blank
2	S20					.86400		.09981				S20
3	S21					8.4614		.96607				S21
4	S22				.57740						.15627	S22
5	S23				5.6651						1.5664	S23
6	S24						.08943					S24
7	S25						.90695					S25
8	S26	.05649							.84325	.11478		S26
9	S27	4.3319							7.9372	1.1141		S27
10	S28		.00456									S28
11	S29		.04556									S29
12	S30			.00102								S30
13	S31			.00407								S31
14	ICV	102.87	1.5551	1.0315	2.0129	1.5705	2.5164	2.0095	77.973	2.5689	1.0114	ICV
15	ICB	.03538*	.00104	-.00001	.00062	.00046	.00727	.00054*	.04780	.00073	.00004	ICB
16	ZZZZ	393.80	.00690	.00088	.00078	.00020	-.04037*	.00179	485.12	.00228	.00020	ZZZZ
17	ICSA1	382.05	.00733	-.00265	.00048	.00003	-.04805*	.00102	497.08	.00124	.00006	ICSA1
18	ICSAB1	377.12	1.0617	1.0837	.50835	.51454	.45B03	.97229	504.45	.50535	.49597	ICSAB1
19	MRLB2901	.32097*	.10330	.00983	.01046	.01043	.10102	.01074	1.1973	.01067	.00966	MRLB2901
20	MRLB2902	.22673	.05101	.00944	.00498	.00418	.09835	.00516	.56035	.01073	.00992	MRLB2902
21	CCV1	102.45	1.5187	1.0150	1.9876	1.5376	2.4839	1.9815	76.543	2.5327	.97933	CCV1
22	CCB1	.04825*	.00109	.00011	.00048	.00047	.00481	.00070	.05921	.00103	.00014	CCB1
23	IPB039WB	.01856	.00081	.00004	.00029	.00011	.00272	.00015	.02139	.00058	-.00008	IPB039WB
24	IPB039WL	5.2639	2.5885	.52258	.50620	.51710	.51531	.51523	52.370	.52268	.48812	IPB039WL
25	IPB039WC	5.2251	2.5574	.51784	.50374	.51337	.51330	.51141	52.495	.52014	.48219	IPB039WC
26	TXB008SB	.06694	.00061	.00099	.00146	.00031	.01410	.00023	.18540	.00090	-.00011	TXB008SB
27	B105-02A	5.4139	2.6424	.55356	.70948	.51173	.55320	.50777	188.47	.52039	.50292	B105-02A
28	B105-02	.06776	.00093	.00316	.20289	.00013	.03468	.00039	141.86	.00133	-.00038	B105-02
29	B105-02J	.01474	.00105	.00183	.04061	-.00003	.00731	.00010	29.077	.00035	-.00007	B105-02J
30	B105-02M	5.1494	2.5305	.51940	.65725	.48127	.51926	.48229	169.32	.49018	.47912	B105-02M
31	B105-02S	5.2194	2.5560	.52998	.66852	.48976	.52624	.48852	172.84	.49687	.48349	B105-02S
32	B105-05	.18401	.00086	-.00125	.20327	.00013	.02763	.00026	146.44	.00145	-.00026	B105-05
33	CCV2	101.08	1.5293	1.0405	2.0156	1.5533	2.5151	2.0212	78.138	2.5755	.96408	CCV2
34	CCB2	.02629	.00041	-.00029	.00048	.00040	.00405	.00042	.06634	.00059	.00011	CCB2
35	MRLB2903	.22038	.10262	.01071	.01053	.01059	.10132	.01071	1.1231	.01089	.00955	MRLB2903
36	B094-02D	11.267	.00080	.00391	.24403	.00055	.01504	.00029	38.595	.00952	.00152	B094-02D
37	B094-02A	17.745	2.6204	.54964	.75347	.51171	.53631	.50490	88.949	.52487	.49789	B094-02A
38	B094-02R	12.239	.00191	.00611	.25187	.00065	.01351	.00038	39.155	.01023	.00178	B094-02R
39	B094-02J	2.4637	-.00037	.00140	.05132	.00008	.00241	.00004	8.0423	.00206	.00013	B094-02J
40	Blank	.01952	.00096	.00041	.00051	.00017	.00051	.00013	.07641	.00031	.00002	Blank
41	MRLB2904	.21682	.10214	.01096	.01049	.01041	.09946	.01053	1.1000	.01066	.00953	MRLB2904
42	MRLB2905	.21792	.04994	.00929	.00507	.00414	.09738	.00519	.53717	.01067	.00955	MRLB2905
43	CCV3	107.09	1.5284	1.0499	2.0696	1.5533	2.5653	2.0311	76.907	2.6010	.96509	CCV3
44	CCB3	.03631*	.00079	.00009	.00065	.00050	.00582	.00041	.04334	.00064	-.00005	CCB3
INDX	LSID	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	LSID

1659

INDX	LSID	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	LSID
1	Blank	.00044	.00002	.00023	-.00014	.00001	.00002	-.00009	-.00061	-.00025	.00001	Blank
2	S20			.20872			.10556					S20
3	S21			2.0539			1.0388					S21
4	S22	.25068	.01070									S22
5	S23	2.4008	.92980									S23
6	S24							.77744				S24
7	S25							7.6025				S25
8	S26								.75397	.32922		S26
9	S27								7.3570	3.3617		S27
10	S28					.02248						S28
11	S29					.23051						S29
12	S30				.02340						.00119	S30
13	S31				.12064						.00463	S31
14	ICV	2.5742	24.512	2.5300	.54466	57.956	2.5378	2.5850	2.6447	58.996	1.0633	ICV
15	ICB	.00091	.01502	.00045	-.00004	.02325	.00104	.00087	.00069	.12718	.00219	ICB
16	ZZZZ	.00209	190.00	.00318*	.01784	196.89	.00174	-.00033	-.00004	.09372	.00317	ZZZZ
17	ICSA1	.00131	189.91	.00236	.01853	196.05	.00147	-.00109	-.00109	.06841	.00038	ICSA1
18	ICSAB1	.52701	191.90	.99555	1.1738	193.54	.48277	1.0669	1.0337	82.319	1.0834	ICSAB1
19	MRLB2901	.01073	.24680*	.01042	.00992	1.0270	.01040	.01014	.01060	1.0647	.01218*	MRLB2901
20	MRLB2902	.01030	.10741	.00255	.10299	.19132	.00525	.01020	.01021	1.0056	.01222*	MRLB2902
21	CCV1	2.5229	24.081	2.4685	.53404	56.645	2.4472	2.5590	2.5866	58.573	1.0453	CCV1
22	CCB1	.00091	.01486	.00033	-.00110	.02521	.00081	.00112	.00075	.08848	.00127	CCB1
23	IPB039WB	.00046	.00741	.00052	-.00044	.00834	.00033	.00029	.00005	.03803	.00047	IPB039WB
24	IPB039WL	.49902	5.1174	.50139	.00124*	47.887	.49205	.51624	.52430	50.353	.53451	IPB039WL
25	IPB039WC	.49517	5.0873	.49655	.00059*	47.572	.48758	.51224	.52037	50.592	.52907	IPB039WC
26	TXB008SB	.00123	.01460	.00022	.00014	.06131	.00042	.00046	.00041	.30220	.00302	TXB008SB
27	B105-02A	.51711	4.9666	.50876	.00956	49.687	1.1195	.54679	.54071	57.829	.58019	B105-02A
28	B105-02	.00154	.08431	.00359	.00776	2.1897	.64829	.00062	.00038	4.3662	.00595	B105-02
29	B105-02J	.00030	.00766	.00076	.00122	.44779	.13288	-.00002	-.00009	.88530	.00073	B105-02J
30	B105-02M	.49604	4.7422	.48212	.00799	46.176	1.0238	.51638	.51131	53.025	.54248	B105-02M
31	B105-02S	.50082	4.7991	.48933	.00893	47.128	1.0450	.52191	.51677	54.450	.55111	B105-02S
32	B105-05	.00160	.08416	.01103	.00772	3.0819	.47043	.00055	.00010	3.8285	.00240	B105-05
33	CCV2	2.4637	24.240	2.4741	.53575	57.036	2.4737	2.5544	2.5795	60.174	1.0737	CCV2
34	CCB2	.00044	.00739	-.00061	-.00010	.01388	.00079	.00077	.00042	.14177*	.00176	CCB2
35	MRLB2903	.01044	.20088	.01047	.01000	.99489	.01044	.01012	.01036	1.0845	.01170	MRLB2903
36	B094-02D	.00602	7.1990	.01017	.00936	5.2021	.19373	.00031	.00918	3.7325	.00354	B094-02D
37	8094-02A	.51520	12.152	.50998	.01273	52.470	.67615	.53977	.54362	55.820	.57030	B094-02A
38	B094-02R	.00607	7.5052	.00974	.01125	5.3630	.19761	.00057	.00921	4.0759	.00531	B094-02R
39	B094-02J	.00124	1.5551	.00129	.00254	1.0769	.04061	.00006	.00170	.86113	.00197	B094-02J
40	Blank	.00043	.04323	-.00034	-.00048	.00230	.00047	.00017	-.00009	.06160	.00136	Blank
41	MRLB2904	.01001	.19809	.00995	.01090	.98933	.0101B	.01000	.01023	1.0497	.01228*	MRLB2904
42	MRLB2905	.01011	.10092	.00307	.10314	.18765	.00535	.01001	.01029	1.0176	.01082	MRLB2905
43	CCV3	2.5622	24.219	2.4905	.54484	57.259	2.4221	2.6717	2.6219	61.345	1.0737	CCV3
44	CCB3	.00092	.00452	-.00004	-.00003	.00579	.00070	.00085	.00038	.09667	.00126	CCB3
INDX	LSID	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	LSID

1055

INDX	LSID	Ag	Na	Sr	Tl	Sn	Ti	V	Zn	LSID
1	Blank	.00004	.00013	-.00002	-.00003	.00007	.00005	-.00017	.00099	Blank
2	S20									S20
3	S21									S21
4	S22							.12481		S22
5	S23							1.2422		S23
6	S24		1.0265							S24
7	S25		5.8811							S25
8	S26									S26
9	S27									S27
10	S28				.00508					S28
11	S29				.04934					S29
12	S30	.03860		.13129		.02451	.01779		.56957	S30
13	S31	.19604		.65862		.12441	.09042		5.6742	S31
14	ICV	.50358	65.775	.48160	2.3740	.51804	.50589	1.5092	2.6521	ICV
15	ICB	.00019	.04666	.00015	.00087	.00033	-.00026	.00037	.00532	ICB
16	ZZZZ	.00014	.07758	.00009	-.00241	.00058	.00408	.00011	.00553	ZZZZ
17	ICSA1	-.00005	.09394	.00004	-.00253	.00012	.00393	-.00051	.00386	ICSA1
18	ICSAB1	1.0993	87.218	.51631	.84253	1.0138	1.0181	.51230	1.0589	ICSAB1
19	MRLB2901	.01063	1.1330	.01026	.01027	.10350	.01051	.01022	.02142	MRLB2901
20	MRLB2902	.00997	.55563	.01005	.01151	.01008	.00948	.01031	.01046	MRLB2902
21	CCV1	.49734	64.947	.48109	2.3251	.50221	.49824	1.4881	2.6089	CCV1
22	CCB1	.00027	.05197	.00008	.00081	-.00056	-.00027	.00060	.00128	CCB1
23	IPB039WB	-.00005	.02602	.00009	.00066	-.00002	-.00029	.00015	-.00004	IPB039WB
24	IPB039WL	.51400	54.642	.49797	.48102	.50519	.51290	.51064	.52266	IPB039WL
25	IPB039WC	.51082	54.944	.49909	.47624	.49910	.51071	.50698	.51889	IPB039WC
26	TXB008SB	.00021	341.64*	.00105	-.00262	.00063	.00007	.00056	.00378	TXB008SB
27	B105-02A	.52632	392.56*	.92247*	.44475	.51782	.51952	.51790	.56111	B105-02A
28	B105-02	.00002	343.78*	.43338	-.00309	.00131	.00361	.00141	.01348	B105-02
29	B105-02J	.00004	70.475	.08684	-.00029	-.00040	.00068	.00028	.00584	B105-02J
30	B105-02M	.50498	350.05*	.84000	.42309	.49163	.48652	.48655	.52880	B105-02M
31	B105-02S	.51507	362.88*	.85613	.42713	.49234	.49183	.49314	.53478	B105-02S
32	B105-05	-.00005	333.21*	.54523	-.00299	.00108	.00542	.00149	.00826	B105-05
33	CCV2	.50752	66.451*	.49895	2.3452	.49742	.50275	1.4950	2.6072	CCV2
34	CCB2	.00011	.19809*	.00017	.00074	-.00047	.00009	.00045	.00067	CCB2
35	MRLB2903	.01039	1.2348*	.01053	.01031	.10121	.01051	.01021	.02022	MRLB2903
36	B094-02D	-.00034	312.88*	.19253	-.00382	.00109	.15688	.01623	.02584	B094-02D
37	B094-02A	.51621	360.56*	.68072	.44231	.51321	.72669	.52523	.56648	B094-02A
38	B094-02R	-.00011	314.79*	.19708	-.00352	.00093	.21284	.01743	.02697	B094-02R
39	B094-02J	-.00016	66.436	.04028	-.00080	.00013	.04501	.00346	.00869	B094-02J
40	Blank	.00008	.19099	.00012	.00042	-.00006	.00006	.00015	.01437	Blank
41	MRLB2904	.01029	1.2111*	.01049	.01017	.10120	.00981	.01023	.02006	MRLB2904
42	MRLB2905	.01021	.62665*	.01037	.01087	.01015	.00979	.01027	.00966	MRLB2905
43	CCV3	.51686	66.671*	.51217	2.3409	.50247	.50916	1.5181	2.6518	CCV3
44	CCB3	.00006	.10687*	.00013	.00041	.00027	-.00041	.00043	.00039	CCB3
INDX	LSID	Ag	Na	Sr	Tl	Sn	Ti	V	Zn	LSID

Sample Name: Blank Acquired: 2/29/2016 12:19:56 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00002	-.00001	.00017	.00010	.00045	-.00001	.00018	-.00007
Stddev	.00003	.00000	.00000	.00001	.00002	.00005	.00000	.00002	.00003
%RSD	5.5743	21.705	9.8471	7.3339	20.416	10.428	31.413	10.353	36.861
#1	.00057	.00001	-.00001	.00016	.00008	.00048	-.00001	.00019	-.00005
#2	.00063	.00002	-.00001	.00017	.00012	.00048	-.00002	.00016	-.00010
#3	.00058	.00001	-.00001	.00018	.00011	.00040	-.00001	.00019	-.00006

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00082	.00044	.00002	.00023	-.00014	.00001	.00002	-.00009	-.00061
Stddev	.00002	.00002	.00001	.00013	.00008	.00003	.00000	.00009	.00007
%RSD	1.8401	4.2362	41.409	56.677	58.569	255.84	16.888	97.119	11.790
#1	-.00081	.00041	.00002	.00017	-.00012	.00002	.00003	-.00009	-.00070
#2	-.00081	.00045	.00003	.00013	-.00007	-.00002	.00002	.00000	-.00059
#3	-.00083	.00044	.00001	.00037	-.00023	.00003	.00002	-.00018	-.00056

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00025	.00001	.00004	.00013	-.00002	-.00003	.00007	.00005	-.00017
Stddev	.00007	.00000	.00003	.00001	.00001	.00000	.00001	.00002	.00001
%RSD	30.120	20.530	62.750	6.4128	48.592	2.2057	20.682	34.343	4.1504
#1	-.00019	.00001	.00001	.00013	-.00003	-.00003	.00009	.00007	-.00017
#2	-.00033	.00001	.00006	.00014	-.00001	-.00003	.00006	.00005	-.00017
#3	-.00022	.00001	.00006	.00013	-.00002	-.00003	.00006	.00003	-.00018

Elem	Zn
Units	Cts/S
Avg	.00099
Stddev	.00006
%RSD	6.5788
#1	.00092
#2	.00105
#3	.00098

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6661.3	109250.	180070.
Stddev	37.9	1311.	1086.
%RSD	.56850	1.1996	.60316
#1	6617.6	110750.	178990.
#2	6682.6	108600.	180050.
#3	6683.7	108390.	181160.

Sample Name: S20 Acquired: 2/29/2016 12:23:03 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Be	Cd	Pb	Mn
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.86400	.09981	.20872	.10556
Stddev	.00090	.00045	.00033	.00029
%RSD	.10388	.45214	.16049	.27790
#1	.86373	.09931	.20894	.10560
#2	.86326	.10017	.20834	.10526
#3	.86500	.09996	.20889	.10584

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6729.1	112640.	183590.
Stddev	37.8	494.	806.
%RSD	.56219	.43867	.43919
#1	6685.7	113140.	183150.
#2	6746.7	112150.	183100.
#3	6755.0	112630.	184520.

Sample Name: S21 Acquired: 2/29/2016 12:26:06 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Be	Cd	Pb	Mn
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8.4614	.96607	2.0539	1.0388
Stddev	.0627	.00347	.0039	.0029
%RSD	.74114	.35939	.18913	.28159
#1	8.4543	.96395	2.0582	1.0356
#2	8.5274	.97008	2.0508	1.0413
#3	8.4026	.96418	2.0525	1.0396

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6585.1	111600.	180800.
Stddev	62.8	563.	1404.
%RSD	.95302	.50471	.77663
#1	6512.9	112090.	179520.
#2	6616.5	110990.	180590.
#3	6626.0	111730.	182300.

Sample Name: S22 Acquired: 2/29/2016 12:29:19 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Ba	Co	Cu	Fe	V
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.57740	.15627	.25068	.01070	.12481
Stddev	.00214	.00065	.00073	.00002	.00013
%RSD	.37041	.41819	.29317	.21288	.10731
#1	.57984	.15701	.24983	.01068	.12469
#2	.57585	.15578	.25108	.01072	.12495
#3	.57652	.15601	.25113	.01068	.12477

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6692.9	113480.	184480.
Stddev	51.6	879.	1024.
%RSD	.77160	.77470	.55501
#1	6636.6	114170.	183530.
#2	6703.9	112490.	184350.
#3	6738.1	113780.	185560.

Sample Name: S23 Acquired: 2/29/2016 12:32:24 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Ba	Co	Cu	Fe	V
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.6651	1.5664	2.4008	.92980	1.2422
Stddev	.0664	.0063	.0076	.00278	.0018
%RSD	1.1724	.39939	.31825	.29919	.14087
#1	5.7042	1.5624	2.4096	.92725	1.2404
#2	5.5884	1.5633	2.3961	.93276	1.2439
#3	5.7026	1.5736	2.3966	.92939	1.2424

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6245.1	112670.	178000.
Stddev	44.5	251.	1400.
%RSD	.71199	.22265	.78650
#1	6194.7	112940.	176660.
#2	6261.9	112600.	177880.
#3	6278.7	112460.	179450.

Sample Name: S24 Acquired: 2/29/2016 12:35:43 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	B	Mo	Na
Units	Cts/S	Cts/S	Cts/S
Avg	.08943	.77744	1.0265
Stddev	.00044	.00147	.0065
%RSD	.49609	.18963	.63013
#1	.08894	.77869	1.0251
#2	.08952	.77782	1.0335
#3	.08982	.77581	1.0208

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6342.5	112950.	175130.
Stddev	35.9	865.	710.
%RSD	.56618	.76575	.40565
#1	6302.0	113760.	174330.
#2	6355.1	112040.	175360.
#3	6370.4	113040.	175690.

Sample Name: S25 Acquired: 2/29/2016 12:38:48 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	B	Mo	Na
Units	Cts/S	Cts/S	Cts/S
Avg	.90695	7.6025	5.8811
Stddev	.00326	.0225	.0735
%RSD	.35950	.29608	1.2490
#1	.90328	7.5812	5.9086
#2	.90806	7.6002	5.7979
#3	.90952	7.6261	5.9369

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5811.6	109340.	163720.
Stddev	13.7	528.	1258.
%RSD	.23638	.48266	.76812
#1	5799.5	109440.	162900.
#2	5826.5	109810.	163090.
#3	5808.8	108770.	165170.

Sample Name: S26 Acquired: 2/29/2016 12:42:01 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Al	Ca	Cr	Ni	K
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05649	.84325	.11478	.75397	.32922
Stddev	.00023	.00267	.00039	.00224	.00178
%RSD	.40184	.31636	.33821	.29760	.54052
#1	.05674	.84021	.11442	.75625	.32762
#2	.05641	.84431	.11472	.75389	.32890
#3	.05631	.84522	.11519	.75176	.33113

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6158.4	109300.	171400.
Stddev	70.1	223.	762.
%RSD	1.1384	.20379	.44471
#1	6081.3	109530.	170750.
#2	6175.6	109080.	171200.
#3	6218.4	109290.	172240.

Sample Name: S27 Acquired: 2/29/2016 12:45:06 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Al	Ca	Cr	Ni	K
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.3319	7.9372	1.1141	7.3570	3.3617
Stddev	.0366	.0473	.0046	.0149	.0094
%RSD	.84394	.59592	.41441	.20274	.27834
#1	4.3572	7.9682	1.1192	7.3737	3.3721
#2	4.2900	7.8828	1.1125	7.3525	3.3541
#3	4.3485	7.9606	1.1104	7.3449	3.3587

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5342.9	105400.	157430.
Stddev	22.7	490.	1435.
%RSD	.42468	.46518	.91153
#1	5316.7	104850.	155970.
#2	5356.9	105550.	157480.
#3	5355.1	105800.	158840.

Sample Name: S28 Acquired: 2/29/2016 12:48:37 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Sb	Mg	Tl
Units	Cts/S	Cts/S	Cts/S
Avg	.00456	.02248	.00508
Stddev	.00002	.00018	.00001
%RSD	.44357	.78686	.15769
#1	.00456	.02229	.00508
#2	.00458	.02249	.00508
#3	.00454	.02265	.00507

Int. Std.	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S
Avg	109510.	179530.
Stddev	759.	1244.
%RSD	.69293	.69279
#1	110380.	178300.
#2	109050.	179500.
#3	109090.	180790.

Sample Name: S29 Acquired: 2/29/2016 12:51:42 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	Sb	Mg	Tl
Units	Cts/S	Cts/S	Cts/S
Avg	.04556	.23051	.04934
Stddev	.00000	.00122	.00016
%RSD	.00146	.52760	.32120
#1	.04556	.22914	.04952
#2	.04556	.23090	.04926
#3	.04556	.23147	.04923

Int. Std.	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S
Avg	110520.	174530.
Stddev	430.	1307.
%RSD	.38876	.74874
#1	110930.	173130.
#2	110070.	174740.
#3	110560.	175720.

Sample Name: S30 Acquired: 2/29/2016 12:54:49 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	As	Li	Se	Ag	Sr	Sn	Ti	Zn
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00102	.02340	.00119	.03860	.13129	.02451	.01779	.56957
Stddev	.00001	.00006	.00001	.00022	.00057	.00009	.00005	.00053
%RSD	1.0009	.24086	1.1624	.58014	.43610	.37790	.26201	.09357
#1	.00101	.02344	.00117	.03835	.13069	.02443	.01784	.56895
#2	.00102	.02333	.00120	.03870	.13183	.02461	.01777	.56986
#3	.00103	.02341	.00119	.03876	.13135	.02450	.01776	.56989

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6596.0	109200.	177520.
Stddev	70.4	997.	585.
%RSD	1.0678	.91327	.32963
#1	6516.9	110330.	177200.
#2	6619.1	108460.	177160.
#3	6652.0	108800.	178190.

Sample Name: S31 Acquired: 2/29/2016 12:57:53 Type: Cal
Method: 16B6010(v46) Mode: IR Corr. Factor: 1.000000
User: admin Date File: Type: Anaylst:
Comment:

Elem	As	Li	Se	Ag	Sr	Sn	Ti	Zn
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00407	.12064	.00463	.19604	.65862	.12441	.09042	5.6742
Stddev	.00001	.00042	.00001	.00060	.00112	.00028	.00018	.0217
%RSD	.20529	.34861	.23282	.30812	.16940	.22520	.20413	.38238
#1	.00407	.12112	.00464	.19535	.65931	.12468	.09030	5.6729
#2	.00407	.12041	.00464	.19635	.65921	.12412	.09063	5.6531
#3	.00408	.12037	.00462	.19643	.65733	.12443	.09033	5.6964

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6581.4	111080.	180230.
Stddev	52.3	844.	691.
%RSD	.79406	.76019	.38322
#1	6526.5	111950.	179510.
#2	6587.2	110260.	180290.
#3	6630.5	111030.	180890.

Sample Name: ICV Acquired: 2/29/2016 13:00:58 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028014 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	102.87	1.5551	1.0315	2.0129	1.5705	2.5164	2.0095	77.973	2.5689	1.0114
Stddev	.55	.0009	.0009	.0010	.0026	.0043	.0085	.106	.0047	.0025
%RSD	.53519	.06019	.09017	.05167	.16803	.17256	.42175	.13558	.18311	.25053
#1	103.50	1.5544	1.0304	2.0117	1.5675	2.5137	2.0176	77.877	2.5720	1.0090
#2	102.51	1.5562	1.0321	2.0136	1.5713	2.5140	2.0103	78.086	2.5634	1.0112
#3	102.59	1.5548	1.0320	2.0133	1.5726	2.5214	2.0007	77.955	2.5712	1.0140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.5742	24.512	2.5300	.54466	57.956	2.5378	2.5850	2.6447	58.996	1.0633
Stddev	.0039	.045	.0018	.00235	.232	.0095	.0025	.0022	.095	.0085
%RSD	.14943	.18430	.07001	.43230	.39947	.37537	.09799	.08516	.16175	.79707
#1	2.5736	24.474	2.5313	.54326	57.689	2.5268	2.5873	2.6473	58.913	1.0709
#2	2.5707	24.562	2.5280	.54333	58.085	2.5432	2.5823	2.6437	59.100	1.0649
#3	2.5783	24.501	2.5308	.54737	58.095	2.5434	2.5854	2.6431	58.974	1.0542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.50358	65.775	.48160	2.3740	.51804	.50589	1.5092	2.6521
Stddev	.00076	.049	.00134	.0093	.00361	.00026	.0019	.0014
%RSD	.15003	.07498	.27839	.39054	.69663	.05196	.12283	.05354
#1	.50318	65.742	.48277	2.3838	.51418	.50563	1.5070	2.6512
#2	.50311	65.831	.48190	2.3727	.51861	.50589	1.5103	2.6514
#3	.50445	65.751	.48013	2.3654	.52132	.50616	1.5102	2.6538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5516.6	106900.	161190.
Stddev	24.7	413.	1154.
%RSD	.44761	.38646	.71571
#1	5489.0	107380.	160010.
#2	5523.9	106680.	161260.
#3	5536.8	106650.	162310.

Sample Name: ICB Acquired: 2/29/2016 13:03:57 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028015 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .03538	.00104	-.00001	.00062	.00046	.00727	F .00054	.04780	.00073
Stddev	.00156	.00060	.00194	.00002	.00005	.00082	.00017	.00171	.00018
%RSD	4.4102	57.367	13092.	3.9245	11.021	11.344	31.490	3.5805	25.150
#1	.03402	.00114	-.00223	.00064	.00051	.00811	.00074	.04856	.00052
#2	.03503	.00158	.00136	.00061	.00047	.00723	.00046	.04900	.00082
#3	.03708	.00040	.00082	.00060	.00041	.00646	.00043	.04584	.00084
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit	.03060						.00050		
Low Limit	-.03060						-.00050		

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00004	.00091	.01502	.00045	-.00004	.02325	.00104	.00087	.00069
Stddev	.00020	.00012	.00153	.00011	.00070	.00799	.00004	.00016	.00012
%RSD	502.18	13.062	10.203	24.803	1710.7	34.380	3.7895	17.813	16.872
#1	-.00015	.00097	.01372	.00034	-.00067	.03162	.00109	.00103	.00063
#2	.00026	.00099	.01462	.00045	-.00017	.01570	.00102	.00087	.00083
#3	.00002	.00077	.01671	.00056	.00071	.02243	.00102	.00072	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.12718	.00219	.00019	.04666	.00015	.00087	.00033	-.00026	.00037
Stddev	.03026	.00073	.00009	.00510	.00005	.00059	.00031	.00032	.00001
%RSD	23.791	33.534	47.804	10.921	30.902	68.528	95.613	125.73	2.7925
#1	.15675	.00296	.00017	.05197	.00010	.00019	.00061	-.00049	.00035
#2	.12851	.00149	.00011	.04181	.00018	.00132	.00038	.00011	.00037
#3	.09628	.00212	.00029	.04621	.00018	.00108	-.00001	-.00039	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zn
Units	mg/L
Avg	.00532
Stddev	.00014
%RSD	2.6916
#1	.00542
#2	.00538
#3	.00516
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: ICB Acquired: 2/29/2016 13:03:57 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028015 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6380.9	105880.	172410.
Stddev	64.9	502.	1152.
%RSD	1.0164	.47406	.66825
#1	6309.7	106400.	171600.
#2	6396.4	105400.	171900.
#3	6436.6	105830.	173730.

Sample Name: ICSA1 Acquired: 2/29/2016 13:15:25 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028017 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	382.05	.00733	-.00265	.00048	.00003	F -.04805	.00102	497.08
Stddev	3.26	.00336	.00328	.00003	.00002	.00105	.00014	1.71
%RSD	.85241	45.777	123.55	5.3107	76.804	2.1833	13.601	.34381
#1	385.59	.01028	-.00635	.00046	.00000	-.04688	.00117	499.05
#2	381.40	.00803	-.00010	.00048	.00005	-.04833	.00090	496.19
#3	379.18	.00368	-.00152	.00051	.00003	-.04892	.00098	496.00
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit						.01000		
Low Limit						-.01000		

Elem	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00124	.00006	.00131	189.91	.00236	.01853	196.05	.00147
Stddev	.00022	.00011	.00012	.57	.00259	.00095	1.17	.00028
%RSD	17.342	169.15	9.3123	.29799	109.78	5.1320	.59863	19.016
#1	.00101	.00019	.00131	189.42	.00501	.01871	194.70	.00168
#2	.00128	.00000	.00144	190.53	-.00017	.01937	196.88	.00115
#3	.00144	.00001	.00119	189.79	.00225	.01750	196.56	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo	Ni	K	Se	Ag	Na	Sr	Tl
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	-.00109	-.00109	.06841	.00038	-.00005	.09394	.00004	-.00253
Stddev	.00024	.00004	.00626	.00211	.00013	.00749	.00003	.00089
%RSD	22.195	3.2319	9.1489	548.40	251.73	7.9745	75.128	35.247
#1	-.00104	-.00106	.07555	.00162	-.00004	.09179	.00003	-.00154
#2	-.00135	-.00112	.06580	-.00205	.00007	.08775	.00002	-.00278
#3	-.00087	-.00110	.06388	.00157	-.00019	.10227	.00008	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L
Avg	.00012	.00393	-.00051	.00386
Stddev	.00069	.00027	.00007	.00030
%RSD	553.55	6.7609	14.425	7.7583
#1	.00091	.00405	-.00048	.00401
#2	-.00017	.00362	-.00046	.00405
#3	-.00037	.00411	-.00060	.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				
Low Limit				

Sample Name: ICSA1 Acquired: 2/29/2016 13:15:25 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028017 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	4910.9	98881.	147920.
Stddev	23.3	787.	1437.
%RSD	.47510	.79611	.97173
#1	4884.0	98909.	146580.
#2	4925.2	98081.	147750.
#3	4923.6	99655.	149440.

Sample Name: ICSAB1 Acquired: 2/29/2016 13:18:57 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028018 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	377.12	1.0617	1.0837	.50835	.51454	.45803	.97229	504.45	.50535	.49597
Stddev	1.42	.0031	.0067	.00087	.00197	.00182	.00124	5.18	.00153	.00072
%RSD	.37641	.29102	.61691	.17081	.38314	.39724	.12764	1.0277	.30221	.14600
#1	377.56	1.0582	1.0873	.50762	.51235	.45625	.97354	498.48	.50619	.49517
#2	378.26	1.0627	1.0760	.50812	.51509	.45797	.97228	507.77	.50358	.49657
#3	375.53	1.0641	1.0878	.50931	.51617	.45988	.97105	507.11	.50627	.49617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.52701	191.90	.99555	1.1738	193.54	.48277	1.0669	1.0337	82.319	1.0834
Stddev	.00293	.16	.00123	.0033	.91	.00224	.0013	.0020	.568	.0053
%RSD	.55676	.08381	.12396	.27809	.47161	.46317	.12106	.19614	.69047	.48687
#1	.52509	192.00	.99553	1.1726	192.49	.48022	1.0656	1.0315	81.707	1.0859
#2	.52555	191.99	.99433	1.1713	193.95	.48370	1.0681	1.0340	82.419	1.0774
#3	.53039	191.72	.99679	1.1775	194.17	.48439	1.0670	1.0355	82.830	1.0870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0993	87.218	.51631	.84253	1.0138	1.0181	.51230	1.0589
Stddev	.0063	.355	.00205	.00065	.0013	.0044	.00032	.0009
%RSD	.57700	.40744	.39782	.07723	.13256	.42960	.06218	.08103
#1	1.0958	86.906	.51527	.84316	1.0140	1.0135	.51214	1.0596
#2	1.0955	87.143	.51499	.84255	1.0123	1.0186	.51208	1.0579
#3	1.1066	87.604	.51867	.84186	1.0150	1.0222	.51266	1.0592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	4849.5	101020.	147100.
Stddev	22.9	741.	835.
%RSD	.47243	.73360	.56788
#1	4827.1	101810.	146260.
#2	4848.3	100340.	147110.
#3	4872.9	100920.	147930.

Sample Name: MRLB2901 Acquired: 2/29/2016 13:25:43 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028019 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .32097	.10330	.00983	.01046	.01043	.10102	.01074	1.1973	.01067
Stddev	.00942	.00055	.00081	.00006	.00006	.00024	.00007	.0229	.00016
%RSD	2.9354	.53416	8.2717	.60985	.62202	.24051	.61819	1.9162	1.4887
#1	.32918	.10267	.01014	.01047	.01046	.10126	.01081	1.1791	.01066
#2	.32305	.10363	.00890	.01038	.01036	.10077	.01068	1.1897	.01083
#3	.31069	.10361	.01044	.01051	.01048	.10104	.01071	1.2231	.01052
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.20000								
Range	20.000%								

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00966	.01073	F .24680	.01042	.00992	1.0270	.01040	.01014	.01060
Stddev	.00001	.00007	.00590	.00097	.00090	.0322	.00015	.00005	.00018
%RSD	.06608	.66809	2.3921	9.2817	9.0472	3.1384	1.4755	.47192	1.7112
#1	.00965	.01065	.25176	.01143	.00990	1.0114	.01043	.01019	.01043
#2	.00966	.01077	.24837	.01033	.00904	1.0056	.01023	.01009	.01079
#3	.00966	.01077	.24027	.00950	.01083	1.0641	.01053	.01013	.01056
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.20000						
Range			20.000%						

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0647	F .01218	.01063	1.1330	.01026	.01027	.10350	.01051	.01022
Stddev	.0086	.00055	.00022	.0056	.00008	.00059	.00053	.00039	.00016
%RSD	.81046	4.4945	2.1008	.49017	.78210	5.7526	.50996	3.7270	1.5397
#1	1.0716	.01192	.01056	1.1393	.01035	.01005	.10298	.01038	.01036
#2	1.0675	.01180	.01088	1.1307	.01026	.00982	.10403	.01020	.01005
#3	1.0551	.01280	.01045	1.1290	.01018	.01094	.10349	.01095	.01026
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.01000							
Range		20.000%							

Elem	Zn
Units	mg/L
Avg	.02142
Stddev	.00017
%RSD	.80121
#1	.02161
#2	.02135
#3	.02129
Check ?	Chk Pass
Value	
Range	

Sample Name: MRLB2901 Acquired: 2/29/2016 13:25:43 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028019 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6368.9	107210.	172740.
Stddev	43.3	403.	731.
%RSD	.67918	.37595	.42308
#1	6323.6	107680.	171990.
#2	6373.3	106980.	172770.
#3	6409.8	106980.	173450.

Sample Name: MRLB2902 Acquired: 2/29/2016 13:28:49 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028020 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.22673	.05101	.00944	.00498	.00418	.09835	.00516	.56035	.01073
Stddev	.00167	.00122	.00131	.00011	.00003	.00020	.00001	.00462	.00020
%RSD	.73623	2.3892	13.875	2.1599	.72502	.20181	.19723	.82386	1.8674
#1	.22481	.05021	.00923	.00486	.00422	.09831	.00515	.56430	.01070
#2	.22754	.05241	.01085	.00505	.00418	.09818	.00516	.56147	.01054
#3	.22784	.05041	.00825	.00503	.00416	.09857	.00517	.55527	.01094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00992	.01030	.10741	.00255	.10299	.19132	.00525	.01020	.01021
Stddev	.00015	.00016	.00340	.00008	.00039	.00523	.00005	.00012	.00017
%RSD	1.4943	1.5710	3.1681	3.1719	.37833	2.7343	.89978	1.1553	1.6724
#1	.00992	.01049	.10419	.00250	.10282	.18528	.00529	.01025	.01039
#2	.01008	.01018	.11097	.00252	.10344	.19435	.00520	.01007	.01020
#3	.00978	.01023	.10707	.00265	.10272	.19434	.00527	.01029	.01005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0056	F .01222	.00997	.55563	.01005	.01151	.01008	.00948	.01031
Stddev	.0073	.00163	.00012	.00098	.00004	.00102	.00053	.00009	.00016
%RSD	.73066	13.313	1.2127	.17591	.39502	8.8348	5.2354	.96702	1.5448
#1	1.0103	.01393	.01006	.55456	.01010	.01064	.01022	.00958	.01041
#2	.99713	.01069	.01001	.55588	.01003	.01263	.01052	.00941	.01013
#3	1.0094	.01204	.00983	.55646	.01003	.01126	.00949	.00944	.01040
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.01000							
Range		20.000%							

Elem	Zn
Units	mg/L
Avg	.01046
Stddev	.00025
%RSD	2.3895
#1	.01051
#2	.01019
#3	.01068
Check ?	Chk Pass
Value	
Range	

Sample Name: MRLB2902 Acquired: 2/29/2016 13:28:49 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028020 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6508.9	108990.	176960.
Stddev	37.5	274.	715.
%RSD	.57579	.25175	.40414
#1	6466.7	109240.	176130.
#2	6521.8	108700.	177330.
#3	6538.2	109030.	177410.

Sample Name: CCV1 Acquired: 2/29/2016 13:31:55 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028021 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	102.45	1.5187	1.0150	1.9876	1.5376	2.4839	1.9815	76.543	2.5327	.97933
Stddev	.26	.0064	.0041	.0005	.0019	.0103	.0116	.543	.0100	.00322
%RSD	.25589	.42100	.40735	.02607	.12282	.41645	.58309	.70963	.39610	.32857
#1	102.26	1.5189	1.0137	1.9882	1.5359	2.4720	1.9733	76.351	2.5238	.98297
#2	102.33	1.5250	1.0196	1.9874	1.5373	2.4906	1.9947	76.122	2.5436	.97816
#3	102.75	1.5123	1.0117	1.9872	1.5397	2.4890	1.9765	77.156	2.5308	.97686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.5229	24.081	2.4685	.53404	56.645	2.4472	2.5590	2.5866	58.573	1.0453
Stddev	.0082	.049	.0036	.00164	.253	.0081	.0065	.0081	.301	.0096
%RSD	.32629	.20362	.14648	.30749	.44737	.33221	.25234	.31306	.51427	.92100
#1	2.5134	24.055	2.4711	.53485	56.371	2.4379	2.5647	2.5931	58.387	1.0447
#2	2.5279	24.137	2.4700	.53512	56.693	2.4519	2.5603	2.5892	58.411	1.0552
#3	2.5274	24.050	2.4644	.53215	56.872	2.4519	2.5520	2.5775	58.920	1.0360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.49734	64.947	.48109	2.3251	.50221	.49824	1.4881	2.6089
Stddev	.00203	.272	.00169	.0125	.00235	.00068	.0019	.0011
%RSD	.40830	.41852	.35144	.53680	.46705	.13585	.12670	.04074
#1	.49516	64.971	.48178	2.3206	.50492	.49879	1.4879	2.6079
#2	.49918	64.663	.47916	2.3392	.50101	.49748	1.4900	2.6088
#3	.49769	65.205	.48232	2.3154	.50071	.49844	1.4863	2.6100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5628.8	108040.	163510.
Stddev	51.3	440.	1172.
%RSD	.91153	.40708	.71659
#1	5573.5	108540.	162820.
#2	5637.9	107830.	162840.
#3	5674.9	107730.	164860.

Sample Name: CCB1 Acquired: 2/29/2016 13:34:53 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028022 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .04825	.00109	.00011	.00048	.00047	.00481	.00070	.05921	.00103
Stddev	.00428	.00032	.00345	.00009	.00004	.00053	.00014	.00036	.00004
%RSD	8.8693	29.265	3266.1	18.528	9.3293	10.983	19.403	.60860	3.7503
#1	.04409	.00142	-.00364	.00056	.00045	.00528	.00084	.05955	.00107
#2	.04803	.00079	.00317	.00050	.00052	.00492	.00070	.05925	.00099
#3	.05264	.00106	.00079	.00038	.00044	.00424	.00057	.05883	.00104
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.03000								
Low Limit	-.03000								

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00014	.00091	.01486	.00033	-.00110	.02521	.00081	.00112	.00075
Stddev	.00001	.00010	.00113	.00012	.00080	.00824	.00012	.00015	.00010
%RSD	9.9187	11.250	7.6172	36.821	73.175	32.699	14.353	13.694	13.868
#1	.00014	.00094	.01479	.00036	-.00017	.01593	.00091	.00127	.00087
#2	.00015	.00080	.01377	.00020	-.00159	.02800	.00084	.00111	.00070
#3	.00013	.00100	.01603	.00044	-.00153	.03169	.00068	.00097	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.08848	.00127	.00027	.05197	.00008	.00081	-.00056	-.00027	.00060
Stddev	.01150	.00141	.00007	.00755	.00001	.00055	.00050	.00017	.00008
%RSD	13.001	111.07	24.741	14.523	16.361	68.490	88.161	62.716	12.960
#1	.10005	.00265	.00034	.05635	.00009	.00134	-.00103	-.00012	.00052
#2	.08834	.00132	.00021	.05630	.00009	.00023	-.00005	-.00046	.00059
#3	.07705	-.00017	.00026	.04325	.00007	.00085	-.00060	-.00024	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zn
Units	mg/L
Avg	.00128
Stddev	.00010
%RSD	7.5087
#1	.00127
#2	.00139
#3	.00120
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: CCB1 Acquired: 2/29/2016 13:34:53 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028022 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6574.7	107910.	176780.
Stddev	58.2	496.	462.
%RSD	.88595	.45974	.26149
#1	6511.8	108430.	176250.
#2	6585.4	107440.	177000.
#3	6626.8	107860.	177080.

Sample Name: CCV2 Acquired: 2/29/2016 14:11:54 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028033 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	101.08	1.5293	1.0405	2.0156	1.5533	2.5151	2.0212	78.138	2.5755
Stddev	.83	.0101	.0084	.0044	.0024	.0158	.0118	.215	.0059
%RSD	.82477	.65786	.80826	.21770	.15565	.62709	.58242	.27508	.22956
#1	100.22	1.5177	1.0312	2.0176	1.5536	2.4969	2.0082	77.890	2.5687
#2	101.89	1.5345	1.0476	2.0106	1.5508	2.5241	2.0242	78.266	2.5793
#3	101.13	1.5356	1.0428	2.0186	1.5556	2.5243	2.0311	78.258	2.5785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.96408	2.4637	24.240	2.4741	.53575	57.036	2.4737	2.5544	2.5795
Stddev	.00230	.0140	.032	.0043	.00116	.210	.0122	.0029	.0021
%RSD	.23829	.56836	.13398	.17595	.21715	.36881	.49340	.11394	.08083
#1	.96569	2.4480	24.203	2.4789	.53636	56.833	2.4675	2.5514	2.5797
#2	.96509	2.4749	24.264	2.4704	.53648	57.022	2.4659	2.5572	2.5773
#3	.96145	2.4681	24.253	2.4731	.53441	57.253	2.4878	2.5544	2.5815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	60.174	1.0737	.50752	F 66.451	.49895	2.3452	.49742	.50275	1.4950
Stddev	.329	.0093	.00292	.145	.00147	.0128	.00211	.00208	.0026
%RSD	.54597	.86506	.57489	.21863	.29518	.54427	.42452	.41284	.17158
#1	59.859	1.0631	.50419	66.349	.50013	2.3306	.49916	.50329	1.4920
#2	60.148	1.0804	.50964	66.387	.49730	2.3510	.49803	.50046	1.4962
#3	60.514	1.0776	.50873	66.617	.49942	2.3541	.49507	.50451	1.4967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				60.000					
Range				10.000%					

Elem	Zn
Units	mg/L
Avg	2.6072
Stddev	.0087
%RSD	.33348
#1	2.6165
#2	2.5994
#3	2.6056
Check ?	Chk Pass
Value	
Range	

Sample Name: CCV2 Acquired: 2/29/2016 14:11:54 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028033 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5605.0	104590.	160510.
Stddev	51.6	683.	499.
%RSD	.92012	.65258	.31058
#1	5553.7	105380.	160300.
#2	5604.4	104130.	160150.
#3	5656.8	104270.	161080.

Sample Name: CCB2 Acquired: 2/29/2016 14:14:52 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028034 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.02629	.00041	-.00029	.00048	.00040	.00405	.00042	.06634	.00059
Stddev	.00109	.00054	.00186	.00003	.00001	.00067	.00005	.00423	.00017
%RSD	4.1444	132.30	631.24	5.5070	2.0810	16.535	12.741	6.3788	28.799
#1	.02723	.00085	-.00194	.00045	.00040	.00471	.00042	.06165	.00078
#2	.02655	.00058	-.00067	.00051	.00040	.00407	.00048	.06750	.00054
#3	.02510	-.00020	.00172	.00047	.00041	.00337	.00037	.06987	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00011	.00044	.00739	-.00061	-.00010	.01388	.00079	.00077	.00042
Stddev	.00012	.00026	.00079	.00016	.00057	.01612	.00020	.00003	.00019
%RSD	109.86	58.515	10.666	25.768	576.14	116.13	24.663	4.1274	45.438
#1	.00024	.00015	.00688	-.00055	-.00003	-.00470	.00057	.00078	.00064
#2	.00008	.00065	.00830	-.00049	.00043	.02221	.00093	.00080	.00029
#3	.00001	.00052	.00700	-.00079	-.00070	.02413	.00088	.00074	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .14177	.00176	.00011	F .19809	.00017	.00074	-.00047	.00009	.00045
Stddev	.01723	.00159	.00011	.00614	.00001	.00036	.00037	.00021	.00005
%RSD	12.152	90.670	94.015	3.0999	8.5408	48.203	79.277	230.46	9.9746
#1	.15928	.00170	.00012	.20483	.00016	.00108	-.00083	.00031	.00050
#2	.12483	.00019	.00000	.19281	.00015	.00077	-.00009	-.00011	.00044
#3	.14121	.00338	.00021	.19662	.00018	.00037	-.00048	.00008	.00041
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.10000			.10000					
Low Limit	-.10000			-.10000					

Elem	Zn
Units	mg/L
Avg	.00067
Stddev	.00010
%RSD	14.307
#1	.00073
#2	.00073
#3	.00056
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: CCB2 Acquired: 2/29/2016 14:14:52 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028034 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6632.4	107860.	177720.
Stddev	57.2	296.	900.
%RSD	.86314	.27457	.50667
#1	6569.4	107830.	176960.
#2	6646.5	107580.	177470.
#3	6681.2	108170.	178710.

Sample Name: MRLB2903 Acquired: 2/29/2016 14:17:59 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028035 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.22038	.10262	.01071	.01053	.01059	.10132	.01071	1.1231	.01089
Stddev	.00214	.00029	.00253	.00005	.00004	.00016	.00006	.0107	.00015
%RSD	.97077	.28556	23.608	.45250	.40634	.16033	.59025	.95476	1.3589
#1	.22203	.10296	.00780	.01050	.01055	.10141	.01069	1.1108	.01105
#2	.21796	.10244	.01239	.01059	.01060	.10114	.01065	1.1305	.01076
#3	.22114	.10246	.01195	.01052	.01063	.10142	.01078	1.1279	.01085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00955	.01044	.20088	.01047	.01000	.99489	.01044	.01012	.01036
Stddev	.00009	.00003	.00238	.00067	.00037	.00806	.00009	.00008	.00018
%RSD	.91420	.28472	1.1844	6.3993	3.7103	.81010	.89686	.75775	1.7103
#1	.00963	.01042	.19858	.01007	.01043	.99580	.01040	.01021	.01057
#2	.00956	.01047	.20333	.01124	.00983	.98641	.01037	.01006	.01024
#3	.00945	.01043	.20072	.01009	.00975	1.0025	.01054	.01009	.01028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0845	.01170	.01039	F 1.2348	.01053	.01031	.10121	.01051	.01021
Stddev	.0107	.00090	.00015	.0068	.00006	.00053	.00036	.00040	.00013
%RSD	.99144	7.6568	1.4018	.55242	.52907	5.1508	.35607	3.8514	1.3200
#1	1.0751	.01083	.01022	1.2273	.01051	.00974	.10109	.01072	.01008
#2	1.0820	.01262	.01047	1.2362	.01059	.01079	.10162	.01077	.01021
#3	1.0962	.01164	.01047	1.2408	.01048	.01041	.10092	.01005	.01035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				1.0000					
Range				20.000%					

Elem	Zn
Units	mg/L
Avg	.02022
Stddev	.00024
%RSD	1.1915
#1	.02031
#2	.01995
#3	.02040
Check ?	Chk Pass
Value	
Range	

Sample Name: MRLB2903 Acquired: 2/29/2016 14:17:59 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028035 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6498.0	107300.	174860.
Stddev	66.8	561.	747.
%RSD	1.0277	.52247	.42693
#1	6426.6	107910.	174070.
#2	6508.5	107180.	174930.
#3	6559.0	106810.	175560.

Sample Name: B094-02D Acquired: 2/29/2016 14:21:43 Type: Unk
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028036 Type: Anaylst: THuang
Comment: TCLP

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	11.267	.00080	.00391	.24403	.00055	.01504	.00029	38.595	.00952
Stddev	.026	.00095	.00135	.00062	.00007	.00049	.00007	.176	.00022
%RSD	.23460	119.97	34.429	.25586	13.069	3.2294	23.432	.45679	2.2749
#1	11.236	.00189	.00481	.24390	.00048	.01545	.00024	38.405	.00958
#2	11.279	.00039	.00456	.24472	.00054	.01516	.00037	38.628	.00969
#3	11.285	.00011	.00236	.24349	.00062	.01450	.00028	38.753	.00927

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00152	.00602	7.1990	.01017	.00936	5.2021	.19373	.00031	.00918
Stddev	.00010	.00003	.0058	.00015	.00119	.0399	.00026	.00018	.00016
%RSD	6.4363	.52317	.08068	1.4714	12.720	.76700	.13557	59.042	1.7248
#1	.00150	.00599	7.2056	.01016	.01065	5.1599	.19343	.00049	.00908
#2	.00163	.00605	7.1968	.01002	.00910	5.2392	.19392	.00031	.00910
#3	.00144	.00602	7.1946	.01032	.00831	5.2071	.19384	.00012	.00936

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	3.7325	.00354	-.00034	F 312.88	.19253	-.00382	.00109	.15688	.01623
Stddev	.0166	.00115	.00006	3.69	.00019	.00034	.00077	.00244	.00014
%RSD	.44504	32.494	18.492	1.1788	.09820	8.8570	70.147	1.5547	.83475
#1	3.7134	.00478	-.00028	315.62	.19245	-.00366	.00092	.15500	.01614
#2	3.7434	.00334	-.00040	314.34	.19239	-.00421	.00193	.15964	.01616
#3	3.7407	.00250	-.00035	308.68	.19274	-.00360	.00043	.15602	.01639

Elem	Zn
Units	mg/L
Avg	.02584
Stddev	.00030
%RSD	1.1657
#1	.02552
#2	.02588
#3	.02612

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5436.1	106360.	158410.
Stddev	33.7	753.	734.
%RSD	.62080	.70807	.46352
#1	5402.8	106480.	157600.
#2	5435.1	105560.	158610.
#3	5470.3	107060.	159020.

Sample Name: B094-02A Acquired: 2/29/2016 14:31:10 Type: Unk
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028037 Type: Anaylst: THuang
Comment: TCLP

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	17.745	2.6204	.54964	.75347	.51171	.53631	.50490	88.949	.52487
Stddev	.068	.0147	.00431	.00185	.00033	.00388	.00593	.655	.00313
%RSD	.38515	.55961	.78389	.24576	.06521	.72352	1.1738	.73658	.59616
#1	17.824	2.6050	.54534	.75451	.51141	.53235	.49929	88.248	.52211
#2	17.702	2.6220	.54961	.75134	.51166	.53646	.50431	89.546	.52422
#3	17.709	2.6342	.55396	.75458	.51207	.54011	.51110	89.052	.52827

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.49789	.51520	12.152	.50998	.01273	52.470	.67615	.53977	.54362
Stddev	.00175	.00210	.048	.00293	.00091	.222	.00370	.00186	.00100
%RSD	.35185	.40727	.39664	.57536	7.1827	.42398	.54688	.34415	.18328
#1	.49969	.51731	12.119	.51332	.01193	52.219	.67224	.54163	.54458
#2	.49779	.51311	12.130	.50879	.01373	52.550	.67664	.53978	.54259
#3	.49619	.51519	12.207	.50782	.01254	52.642	.67958	.53791	.54369

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	55.820	.57030	.51621	F 360.56	.68072	.44231	.51321	.72669	.52523
Stddev	.286	.00347	.00418	2.79	.00050	.00314	.00233	.00189	.00169
%RSD	.51245	.60846	.80957	.77395	.07380	.71093	.45439	.26055	.32256
#1	55.502	.56680	.51204	363.40	.68019	.44005	.51589	.72593	.52331
#2	56.057	.57037	.51619	360.45	.68079	.44098	.51162	.72529	.52588
#3	55.900	.57374	.52040	357.82	.68119	.44590	.51212	.72884	.52650

Elem	Zn
Units	mg/L
Avg	.56648
Stddev	.00162
%RSD	.28624
#1	.56464
#2	.56710
#3	.56770

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5124.0	105450.	152240.
Stddev	72.9	770.	258.
%RSD	1.4231	.73062	.16940
#1	5045.6	105980.	151950.
#2	5136.5	104570.	152440.
#3	5189.8	105810.	152320.

Sample Name: B094-02R Acquired: 2/29/2016 14:34:09 Type: Unk
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028038 Type: Anaylst: THuang
Comment: TCLP

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	12.239	.00191	.00611	.25187	.00065	.01351	.00038	39.155	.01023
Stddev	.020	.00127	.00035	.00103	.00004	.00033	.00005	.194	.00008
%RSD	.15978	66.414	5.7220	.40761	6.1793	2.4599	13.026	.49571	.76984
#1	12.220	.00303	.00641	.25162	.00060	.01379	.00044	38.947	.01025
#2	12.259	.00217	.00620	.25100	.00068	.01360	.00035	39.186	.01014
#3	12.238	.00053	.00573	.25300	.00067	.01314	.00036	39.332	.01030

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00178	.00607	7.5052	.00974	.01125	5.3630	.19761	.00057	.00921
Stddev	.00006	.00017	.0062	.00052	.00082	.0453	.00110	.00023	.00011
%RSD	3.5823	2.8620	.08226	5.3576	7.2509	.84512	.55763	40.204	1.1679
#1	.00171	.00620	7.5062	.00917	.01031	5.3138	.19758	.00080	.00911
#2	.00183	.00587	7.4986	.01020	.01176	5.3720	.19653	.00034	.00932
#3	.00180	.00614	7.5109	.00985	.01168	5.4031	.19873	.00056	.00919

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	4.0759	.00531	-.00011	F 314.79	.19708	-.00352	.00093	.21284	.01743
Stddev	.0252	.00036	.00018	.63	.00112	.00106	.00021	.00485	.00013
%RSD	.61917	6.8544	165.01	.19870	.56918	30.102	22.141	2.2802	.72187
#1	4.0478	.00573	-.00011	314.08	.19688	-.00336	.00082	.21696	.01737
#2	4.0832	.00515	.00007	315.04	.19608	-.00255	.00081	.20749	.01734
#3	4.0966	.00506	-.00030	315.26	.19829	-.00465	.00117	.21406	.01757

Elem	Zn
Units	mg/L
Avg	.02697
Stddev	.00023
%RSD	.85486
#1	.02694
#2	.02721
#3	.02675

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5473.9	109040.	160790.
Stddev	55.8	309.	559.
%RSD	1.0194	.28329	.34755
#1	5416.1	109310.	160270.
#2	5478.2	108700.	160730.
#3	5527.4	109110.	161380.

Sample Name: B094-02J Acquired: 2/29/2016 14:37:57 Type: Unk
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028039 Type: Anaylst: THuang
Comment: TCLP

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	2.4637	-.00037	.00140	.05132	.00008	.00241	.00004	8.0423	.00206	.00013
Stddev	.0079	.00072	.00077	.00020	.00003	.00044	.00002	.0479	.00013	.00027
%RSD	.31967	191.41	55.088	.38797	32.368	18.090	59.641	.59602	6.2531	198.12
#1	2.4650	.00045	.00121	.05134	.00010	.00275	.00002	7.9949	.00217	.00006
#2	2.4708	-.00076	.00074	.05150	.00005	.00256	.00003	8.0907	.00192	-.00009
#3	2.4553	-.00082	.00225	.05111	.00009	.00192	.00006	8.0413	.00211	.00043

Elem	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00124	1.5551	.00129	.00254	1.0769	.04061	.00006	.00170	.86113	.00197
Stddev	.00007	.0050	.00065	.00063	.0101	.00016	.00007	.00002	.00906	.00204
%RSD	6.0270	.32004	50.065	24.823	.93831	.39095	123.02	.94988	1.0517	103.26
#1	.00125	1.5508	.00184	.00182	1.0857	.04076	-.00001	.00168	.86772	.00301
#2	.00131	1.5540	.00147	.00283	1.0792	.04044	.00014	.00172	.86487	-.00037
#3	.00116	1.5606	.00058	.00299	1.0659	.04064	.00005	.00170	.85080	.00329

Elem	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	-.00016	66.436	.04028	-.00080	.00013	.04501	.00346	.00869
Stddev	.00008	.544	.00026	.00096	.00053	.00088	.00028	.00013
%RSD	51.476	.81931	.65592	119.76	402.06	1.9645	8.1499	1.5064
#1	-.00016	66.085	.04012	.00028	-.00033	.04464	.00315	.00873
#2	-.00007	67.063	.04059	-.00154	.00001	.04601	.00371	.00855
#3	-.00024	66.160	.04014	-.00115	.00071	.04436	.00352	.00880

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6130.3	109560.	171610.
Stddev	43.5	1064.	852.
%RSD	.70978	.97114	.49647
#1	6080.8	109800.	170930.
#2	6148.1	108390.	171320.
#3	6162.2	110480.	172560.

Sample Name: MRLB2904 Acquired: 2/29/2016 14:44:11 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028041 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.21682	.10214	.01096	.01049	.01041	.09946	.01053	1.1000	.01066
Stddev	.00099	.00044	.00133	.00001	.00008	.00023	.00009	.0025	.00016
%RSD	.45762	.42728	12.095	.10289	.73557	.22875	.81333	.22563	1.4928
#1	.21569	.10250	.01012	.01049	.01032	.09972	.01043	1.0974	.01082
#2	.21756	.10166	.01249	.01050	.01046	.09936	.01057	1.1023	.01050
#3	.21722	.10228	.01028	.01047	.01045	.09930	.01058	1.1005	.01066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00953	.01001	.19809	.00995	.01090	.98933	.01018	.01000	.01023
Stddev	.00008	.00008	.00135	.00069	.00108	.01005	.00025	.00008	.00027
%RSD	.86538	.82656	.68129	6.9471	9.9450	1.0161	2.4069	.75571	2.6604
#1	.00953	.00996	.19955	.01073	.01020	.98276	.01003	.00991	.01052
#2	.00944	.00997	.19785	.00969	.01035	.98433	.01046	.01005	.01020
#3	.00961	.01011	.19688	.00942	.01215	1.0009	.01005	.01002	.00998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0497	F .01228	.01029	F 1.2111	.01049	.01017	.10120	.00981	.01023
Stddev	.0096	.00163	.00015	.0059	.00010	.00067	.00055	.00048	.00011
%RSD	.91066	13.302	1.4835	.48427	.98112	6.5625	.54761	4.8466	1.0734
#1	1.0399	.01125	.01046	1.2055	.01047	.01084	.10183	.00926	.01016
#2	1.0590	.01416	.01018	1.2172	.01060	.00951	.10100	.01008	.01017
#3	1.0501	.01142	.01022	1.2106	.01040	.01016	.10077	.01008	.01035
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.01000		1.0000					
Range		20.000%		20.000%					

Elem	Zn
Units	mg/L
Avg	.02006
Stddev	.00001
%RSD	.07194
#1	.02007
#2	.02004
#3	.02005
Check ?	Chk Pass
Value	
Range	

Sample Name: MRLB2904 Acquired: 2/29/2016 14:44:11 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028041 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6554.0	108880.	175900.
Stddev	71.0	786.	593.
%RSD	1.0829	.72218	.33684
#1	6476.8	109760.	175250.
#2	6568.8	108250.	176070.
#3	6616.4	108620.	176400.

Sample Name: MRLB2905 Acquired: 2/29/2016 14:48:05 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028042 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.21792	.04994	.00929	.00507	.00414	.09738	.00519	.53717	.01067
Stddev	.00075	.00038	.00092	.00006	.00006	.00013	.00005	.00414	.00023
%RSD	.34351	.75181	9.8603	1.0984	1.5634	.13670	.96459	.77131	2.1226
#1	.21853	.05036	.00838	.00503	.00406	.09745	.00523	.53469	.01093
#2	.21708	.04981	.01021	.00513	.00417	.09723	.00520	.54196	.01052
#3	.21815	.04964	.00928	.00504	.00418	.09747	.00513	.53488	.01056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.00955	.01011	.10092	.00307	.10314	.18765	.00535	.01001	.01029
Stddev	.00020	.00024	.00160	.00084	.00064	.01981	.00009	.00007	.00015
%RSD	2.1029	2.3699	1.5844	27.445	.62207	10.557	1.6401	.70511	1.4486
#1	.00972	.01019	.10218	.00339	.10387	.16967	.00545	.01008	.01021
#2	.00933	.00984	.09912	.00371	.10265	.20889	.00529	.01000	.01047
#3	.00958	.01030	.10146	.00212	.10291	.18439	.00530	.00994	.01020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	1.0176	.01082	.01021	F .62665	.01037	.01087	.01015	.00979	.01027
Stddev	.0137	.00016	.00005	.00524	.00003	.00033	.00040	.00016	.00013
%RSD	1.3504	1.4731	.47875	.83620	.24900	3.0139	3.9706	1.6152	1.2917
#1	1.0231	.01065	.01023	.62897	.01039	.01096	.00969	.00970	.01031
#2	1.0020	.01085	.01015	.63032	.01036	.01115	.01043	.00969	.01037
#3	1.0277	.01096	.01024	.62064	.01034	.01051	.01033	.00997	.01012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.50000					
Range				20.000%					

Elem	Zn
Units	mg/L
Avg	.00966
Stddev	.00024
%RSD	2.4409
#1	.00991
#2	.00964
#3	.00944
Check ?	Chk Pass
Value	
Range	

Sample Name: MRLB2905 Acquired: 2/29/2016 14:48:05 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028042 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6681.2	112710.	181420.
Stddev	26.9	886.	783.
%RSD	.40258	.78573	.43139
#1	6650.1	113600.	180540.
#2	6697.2	111830.	181700.
#3	6696.2	112710.	182030.

Sample Name: CCV3 Acquired: 2/29/2016 14:51:29 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028043 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	107.09	1.5284	1.0499	2.0696	1.5533	2.5653	2.0311	76.907	2.6010
Stddev	.69	.0068	.0019	.0039	.0058	.0110	.0036	.587	.0033
%RSD	.64680	.44560	.18345	.18802	.37283	.42943	.17536	.76292	.12786
#1	107.74	1.5206	1.0503	2.0711	1.5527	2.5528	2.0281	76.283	2.5971
#2	107.16	1.5327	1.0478	2.0652	1.5478	2.5692	2.0350	76.991	2.6032
#3	106.36	1.5320	1.0516	2.0726	1.5593	2.5738	2.0303	77.447	2.6025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.96509	2.5622	24.219	2.4905	.54484	57.259	2.4221	2.6717	2.6219
Stddev	.00213	.0064	.046	.0046	.00111	.402	.0119	.0025	.0019
%RSD	.22025	.24962	.18867	.18494	.20371	.70181	.49022	.09304	.07043
#1	.96265	2.5549	24.169	2.4918	.54448	56.975	2.4160	2.6688	2.6216
#2	.96658	2.5647	24.227	2.4943	.54396	57.082	2.4144	2.6730	2.6203
#3	.96603	2.5670	24.260	2.4854	.54609	57.719	2.4357	2.6733	2.6239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	61.345	1.0737	.51686	F 66.671	.51217	2.3409	.50247	.50916	1.5181
Stddev	.456	.0042	.00122	.330	.00178	.0048	.00091	.00194	.0021
%RSD	.74286	.39312	.23509	.49517	.34830	.20525	.18133	.38180	.13668
#1	60.961	1.0692	.51545	66.456	.51213	2.3382	.50300	.50983	1.5158
#2	61.225	1.0776	.51755	66.506	.51041	2.3464	.50142	.50696	1.5186
#3	61.849	1.0742	.51757	67.051	.51398	2.3380	.50300	.51067	1.5198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				60.000					
Range				10.000%					

Elem	Zn
Units	mg/L
Avg	2.6518
Stddev	.0045
%RSD	.16968
#1	2.6569
#2	2.6484
#3	2.6502
Check ?	Chk Pass
Value	
Range	

Sample Name: CCV3 Acquired: 2/29/2016 14:51:29 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028043 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	5592.5	107680.	161550.
Stddev	41.0	1064.	967.
%RSD	.73360	.98807	.59852
#1	5552.2	108780.	160730.
#2	5591.1	107610.	161300.
#3	5634.3	106650.	162620.

Sample Name: CCB3 Acquired: 2/29/2016 14:54:54 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028044 Type: Anaylst: THuang
Comment:

Elem	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	F .03631	.00079	.00009	.00065	.00050	.00582	.00041	.04334	.00064
Stddev	.00318	.00074	.00124	.00007	.00007	.00079	.00003	.00480	.00006
%RSD	8.7651	93.532	1402.3	11.211	13.537	13.537	8.0569	11.086	9.8336
#1	.03982	.00130	.00127	.00056	.00043	.00665	.00044	.03779	.00064
#2	.03548	-.00006	-.00120	.00070	.00055	.00574	.00041	.04590	.00058
#3	.03362	.00112	.00020	.00068	.00053	.00508	.00038	.04632	.00070
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.03000								
Low Limit	-.03000								

Elem	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	-.00005	.00092	.00452	-.00004	-.00003	.00579	.00070	.00085	.00038
Stddev	.00011	.00023	.00337	.00056	.00048	.00795	.00016	.00003	.00017
%RSD	233.64	24.821	74.417	1362.4	1415.6	137.34	23.304	3.2706	44.238
#1	.00006	.00112	.00709	.00016	.00040	.00131	.00054	.00084	.00053
#2	-.00017	.00097	.00071	.00039	.00005	.00109	.00087	.00088	.00020
#3	-.00004	.00067	.00577	-.00068	-.00055	.01497	.00069	.00083	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Avg	.09667	.00126	.00006	F .10687	.00013	.00041	.00027	-.00041	.00043
Stddev	.01685	.00039	.00015	.00527	.00001	.00085	.00030	.00030	.00015
%RSD	17.434	30.573	262.99	4.9339	6.7726	205.63	109.84	73.448	34.555
#1	.11409	.00094	-.00012	.10870	.00014	.00093	.00062	-.00076	.00036
#2	.09547	.00115	.00017	.11099	.00012	.00087	.00010	-.00031	.00060
#3	.08045	.00169	.00012	.10093	.00013	-.00056	.00009	-.00017	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000					
Low Limit				-.10000					

Elem	Zn
Units	mg/L
Avg	.00039
Stddev	.00018
%RSD	45.692
#1	.00059
#2	.00030
#3	.00027
Check ?	Chk Pass
High Limit	
Low Limit	

Sample Name: CCB3 Acquired: 2/29/2016 14:54:54 Type: QC
Method: 16B6010(v46) Mode: CONC Corr. Factor: 1.000000
User: admin Date File: ID8B028044 Type: Anaylst: THuang
Comment:

Int. Std.	Sc2273_A	Sc3613_R	Sc3645_A
Units	Cts/S	Cts/S	Cts/S
Avg	6531.9	107380.	172930.
Stddev	84.8	981.	965.
%RSD	1.2986	.91329	.55793
#1	6441.8	108510.	171930.
#2	6543.4	106860.	173000.
#3	6610.3	106770.	173850.

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # VC-15-014-1

Filter Lot # NA

all the samples are pH < 2

Book #: EIP-128

Batch: IPB034W

Matrix: Water

Digestor ID: E

SOP #	Rev. #
☐ EMAX-3005	4
☑ EMAX-3010	6
☐ EMAX-3050	5
☐ EMAX-200.7	4
☐ EMAX-	

Start	Temp	End	Temp
	92.9 °C		92.4 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SMIA-013-11-19	0.25
LCS-2	-11-13	0.25
LCS-3	-11-14	0.50
MS	same spike soln & vol as LCS 1,2,3	
Blank Soil (Bead)	NA	NA
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-005-14-09	1.5 + 1.5
HCl	SWIA-005-19-08	2.5 + 2.5
H_2O_2	NA	NA
HNO_3(1:1)	NA	NA
pH Strip (0-14)	HC573149	NA
Digestate Location	Metals	
Extract Location	NA	
☑ Reagent Water ID:	SM5A-03-02-07	
☑ Thermometer ID:	101993366/ E19	
☑ Pipette ID:	149780357	
☑ Pipette ID:	239360318	
☐ Pipette ID:	NA	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: SP

Standard Added By: SP Witnessed By: TH

Extract Rcvd By: TH Checked By: TH

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16IPB034W01	IPB034WB	50	ml	2/25/16 10:10	50	50	50	1	
16IPB034W02	IPB034WL	50	ml	2/25/16 10:10	50	50	50	1	
16IPB034W03	TXB005SB	10	ml	2/25/16 10:10	50	50	50	5	TCLP
16IPB034W04	B094-02R	10	ml	2/25/16 10:10	50	50	50	5	TCLP
16IPB034W05	B094-02M	10	ml	2/25/16 10:10	50	50	50	5	TCLP
16IPB034W06	B094-02D	10	ml	2/25/16 10:10	50	50	50	5	TCLP

SP 2/25/16

Vd=digestate volume

PrepFctr=)ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 2/25/16 11:30

☑ Digestion Ended @ 2/25/16 16:14

Comments:

Prepared By: SPara

Checked By: TH

Date 2/25/16

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	TCLPSoln	TCLPVol	Exrtract pH	Preservation	Comments
16TXB005S01	TXB005SB	0	g	2/16/16 14:34		2000		HNO_3	
16TXB005S02	A134-01	100	g	2/16/16 14:41	#1	2000	5.06	HNO_3	for Cr only
16TXB005S03	A134-02	100.03	g	2/16/16 14:43	#1	2000	5.05	HNO_3	for Cr, Pb
16TXB005S04	A134-03	100	g	2/16/16 14:46	#1	2000	5.26	HNO_3	for Pb only
16TXB005S05	A206-01	100	g	2/16/16 14:48	#1	2000	5.79	HNO_3	for Pb only
16TXB005S06	B094-02	100.01	g	2/16/16 14:50	#1	2000	5.08	HNO_3	for 8270, 8151, 8081, Metals, & Hg... (UNPRESERVED)
16TXB005S07	B498-01	90	g	2/16/16 14:53	#1	1800	4.84	HNO_3	7 elements + Hg

☑ DateTimeStarted 2/16/2016 17:30 ☑ Thermometer Reset on 2/16/2016 17:30 Balance ID: 10203192. Calibration check was verified prior to use.

☑ DateTimeEnded 2/17/2016 11:30 Note: Sample preserved with HNO_3 is for metals analysis. MS/MSD were spiked prio Prepared By: DFelic

Extract Location: Metals Received By: SP Checked By: ML

Comment: 02/17/16 Date 2/17/16

1165

EMAX LABORATORIES, INC.

FileID: TXB005S

TCLP EXTRACTION LOG

Determination of TCLP Solution							Determination of TCLP Extract Filtration			Determination of % solids for aqueos phase			
LabSampleID	Phase(s)	Aliquot	Sample pH	HCl	pH	TCLPSolnReq'd	(ml)	(g)	Pressure	WtS(g)	WtF(g)	WtDFS(g)	% Solids
TXB0055B							100						
A134-01	1	5.01	8.54	3.5	1.45	#1	100	97.71	Vacuum				
A134-02	1	5	8.08	3.5	1.42	#1	100	98.59	Vacuum				
A134-03	1	5.02	8.17	3.5	1.47	#1	100	98.83	Vacuum				
A206-01	1	5	8.23	3.5	1.53	#1	100	98.56	Vacuum				
B094-02	1	5.01	8.83	3.5	1.46	#1	100	98.40	Vacuum				
B498-01	1	5.02	5.63	3.5	1.53	#1	100	97.36	Vacuum				

Calibration of pH Meter		InstrumentID:	96
BufferID	Value	Reading	DateTime
SW1-01-780	4	4.01	2/16/16 17:18
SW1-01-794	7	7	2/16/16 17:17
SW1A-005-12-24	CalVer 5	5.03	2/16/16 17:19
SW1-01-780	4	4.01	2/17/16 15:58
SW1-01-794	7	7	2/17/16 15:56
SW1A-005-12-24	CalVer 5	5.03	2/17/16 15:59
ID	Reagent	Desc	Expiration Date
SP1A-07-01-08	HCl	1N	04/01/17
SW1A-005-14-09	HNO_3	Conc	04/29/17
SP1B-08-54-04	TCLP Soln	#1	08/09/16
SP1B-08-56-02	TCLP Soln	#1	08/16/16
Rotary Agitator #	Criteria	rpm	DateTime
1	30 ± 2 rpm	30	2/16/16 17:20
	30 ± 2 rpm		
Thermostat Setting:	73 F /23 C	Thermometer ID:	122273404
TCLP Room Temperature	Criteria	Rdg	DateTime
Room Temp (°C) High	23 ± 2 °C	23.4	2/17/16 9:20
Room Temp (°C) Low	23 ± 2 °C	21.9	2/17/16 0:13
Pipette ID	PE00-01		
CONCENTRATOR (WATER BATH)			
Concentrator #	Temp Setting	Thermometer Rdg	Thermometer ID
5	50	50	SVOC-T1
Filter ID/Lot #	103013/062513		
pH strip Lot#	HC554612		

Legend:

WtS = weight of sample

WtF = weight of filter

WtDFS = weight of dried filter + solids

Prepared By: DFelic

Checked By: ML

Date 2/17/16

MERCURY

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16B094

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGB009WB	ND	1	NA	0.50	0.054	0.10	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	NA	NA
LCS1W	HGB009WL	2.53	1	NA	0.50	0.054	0.10	02/18/1619:19	02/18/1614:10	M47B007038	M47B007	HGB009W	NA	NA
CAFB-IDW-W-022016	B094-03	ND	1	NA	0.50	0.054	0.10	02/18/1619:24	02/18/1614:10	M47B007040	M47B007	HGB009W	02/10/1610:58	02/11/16
CAFB-IDW-W-022016MS	B094-03M	2.52	1	NA	0.50	0.054	0.10	02/18/1619:28	02/18/1614:10	M47B007042	M47B007	HGB009W	02/10/1610:58	02/11/16
CAFB-IDW-W-022016DUP	B094-03D	ND	1	NA	0.50	0.054	0.10	02/18/1619:30	02/18/1614:10	M47B007043	M478007	HGB009W	02/10/1610:58	02/11/16

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW7470A

MATRIX : WATER
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : HGB009WB HGB009WL
LAB FILE ID : M47B007037 M47B007038
DATE PREPARED : 02/18/1614:10 02/18/1614:10
DATE ANALYZED : 02/18/1619:16 02/18/1619:19
PREP BATCH : HGB009W HGB009W
CALIBRATION REF: M47B0070 M47B0070

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	QC LIMIT (%)
Mercury	ND	2.5	2.53	101	80-120

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW7470A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-W-022016	CAFB-IDW-W-022016MS
LAB SAMPLE ID	: B094-03	B094-03M
LAB FILE ID	: M47B007040	M47B007042
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:24	02/18/1619:28
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
Mercury	ND	2.50	2.52	101	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW7470A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-W-022016	CAF8-IDW-W-022016DUP
LAB SAMPLE ID	: B094-03	B094-03D
LAB FILE ID	: M47B007040	M47B007043
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:24	02/18/1619:30
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
Mercury	ND	ND	0	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/18/16 **Start Time:** 17:55

End Date: 2/18/16 **End Time:** 20:12

Comments:

QC OK

B091 Total QC were out of limit due to matrix interference, Diluted at 5X 2mL → 10mL = 5X

Book #:	A47-100
Instrument No.:	47
Analytical Sequence/Batch:	M478007
Method File:	HG1
Micropipette ID:	☐ ICP DOE-1
Micropipette ID:	☑ HG-03
Micropipette ID:	☑ HG-04
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-7470	7
☐ EMAX-7471	8
☐ EMAX-245.1	3
☐ EMAX-	

STANDARDS ID	
S1	BLANK
S2	SM3B-12-50-07
S3	↓
S4	
S5	
S6	
CCV	
ICV	SM3B-12-50-08
LCS	↓
Analytical Spike	
SM3B-12-50-09 TV 3ug/L	

Analyzed By: HT

Date: 2/18/16

"M47B007"

EMAXlfid	EMAXlsid	conc	Raw_resp	rsd/rf	adatetime	DF
M47B007001	STD01REP1	0	-172		02/18/1617:55	1
M47B007002	STD02REP1	.2	14512		02/18/1617:57	1
M47B007003	STD03REP1	.5	37211		02/18/1617:59	1
M47B007004	STD04REP1	1	62735		02/18/1618:01	1
M47B007005	STD05REP1	2	122197		02/18/1618:03	1
M47B007006	STD06REP1	5	298447		02/18/1618:05	1
M47B007007	ICV	2.08	126141	0	02/18/1618:10	1
M47B007008	ICB	-.068	-683	0	02/18/1618:13	1
M47B007009	CCV1	1.98	120684	0	02/18/1618:15	1
M47B007010	CCB1	-.043	811	0	02/18/1618:17	1
M47B007011	HGB008WB	-.065	-453	0	02/18/1618:19	1
M47B007012	HGB008WL	2.56	154695	0	02/18/1618:21	1
M47B007013	HGB008WC	2.53	153167	0	02/18/1618:23	1
M47B007014	B091-04A	2.74	165413	0	02/18/1618:25	1
M47B007015	B091-04	.491	32441	0	02/18/1618:28	1
M47B007016	B091-04J	.114	10084	0	02/18/1618:30	5
M47B007017	B091-04M	2.36	142965	0	02/18/1618:32	1
M47B007018	B091-04S	2.31	139843	0	02/18/1618:34	1
M47B007019	B091-02	.001	3444	0	02/18/1618:37	1
M47B007020	B091-08	.453	30165	0	02/18/1618:39	1
M47B007021	CCV2	1.98	120489	0	02/18/1618:41	1
M47B007022	CCB2	-.039	1052	0	02/18/1618:44	1
M47B007023	B091-04A	2.61	157900	0	02/18/1618:46	1
M478007024	B091-04	-.031	1531	0	02/18/1618:48	1
M47B007025	B091-04J	-.022	2048	0	02/18/1618:50	5
M47B007026	B091-04M	2.19	132701	0	02/18/1618:52	1
M47B007027	B091-04S	2.17	131698	0	02/18/1618:55	1
M47B007028	B091-08	-.073	-961	0	02/18/1618:57	1
M47B007029	TXB005SB	.01	3954	0	02/18/1618:59	1
M47B007030	B498-01A	2.99	180263	0	02/18/1619:01	1
M47B007031	B498-01	-.014	2549	0	02/18/1619:03	1
M47B007032	B498-01J	-.017	2366	0	02/18/1619:05	5
M47B007033	CCV3	2.04	124071	0	02/18/1619:08	1
M47B007034	CCB3	-.011	2708	0	02/18/1619:10	1
M47B007035	B498-01M	2.51	152122	0	02/18/1619:12	1
M47B007036	B498-01S	2.41	146073	0	02/18/1619:14	1
M47B007037	HGB009WB	-.06	-211	0	02/18/1619:16	1
M47B007038	HGB009WL	2.53	152983	0	02/18/1619:19	1
M47B007039	B094-03A	2.92	175943	0	02/18/1619:21	1
M47B007040	B094-03	-.064	-406	0	02/18/1619:24	1
M47B007041	B094-03J	-.009	2840	0	02/18/1619:26	5
M47B007042	B094-03M	2.52	152405	0	02/18/1619:28	1
M47B007043	B094-03D	-.039	1043	0	02/18/1619:30	1
M47B007044	TXB005SB	-.023	1982	0	02/18/1619:32	1
M47B007045	CCV4	1.99	121133	0	02/18/1619:34	1
M47B007046	CCB4	-.04	985	0	02/18/1619:36	1
M47B007047	B094-02A	3.04	183376	0	02/18/1619:38	1
M47B007048	B094-02	-.052	306	0	02/18/1619:40	1
M47B007049	B094-02J	-.042	892	0	02/18/1619:42	5
M47B007050	B094-02M	2.38	144149	0	02/1B/1619:45	1
M47B007051	B094-02D	-.047	558	0	02/18/1619:47	1
M47B007052	B091-04A	3.12	188151	0	02/18/1619:49	5
M47B007053	B091-04I	.086	8467	0	02/18/1619:51	5
M47B007054	B091-04J	-.005	3082	0	02/18/1619:53	25
M47B007055	B091-04M	.577	37528	0	02/18/1619:55	5
M47B007056	B091-04S	.595	38578	0	02/18/1619:57	5
M47B007057	CCV5	1.94	118334	0	02/18/1619:59	1
M47B007058	CCB5	-.087	-1772	0	02/18/1620:01	1
M47B007059	B091-02I	-.046	619	0	02/18/1620:03	5
M47B007060	B091-08I	.079	8036	0	02/18/1620:06	5
M47B007061	CCV6	1.97	120174	0	02/18/1620:09	1
M47B007062	CCB6	-.048	534	0	02/18/1620:12	1
**********	**********	**********	**********	**********	**********	***
EMAXlfid	EMAXlsid	Xint	Yint	rrf	adatetime	DF
M47B007001	BLANK	-6.618147E-02	3891.624	.9998381	02/18/1620:12	1

M478007

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	CCV1		1.0000	1.0000	
4	CCB1		1.0000	1.0000	
5	HGB008WB		1.0000	1.0000	
6	HGB008WL		1.0000	1.0000	
7	HGB008WC		1.0000	1.0000	
8	B091-04A	TOT	1.0000	1.0000	
9	B091-04	TOT	1.0000	1.0000	
10	B091-04J	TOT	1.0000	1.0000	
11	B091-04M	TOT	1.0000	1.0000	
12	B091-04S	TOT	1.0000	1.0000	
13	B091-02	TOT	1.0000	1.0000	
14	B091-08	TOT	1.0000	1.0000	
15	CCV2		1.0000	1.0000	
16	CCB2		1.0000	1.0000	
17	B091-04A	DISS	1.0000	1.0000	
18	B091-04	DISS	1.0000	1.0000	
19	B091-04J	DISS	1.0000	1.0000	
20	B091-04M	DISS	1.0000	1.0000	
21	B091-04S	DISS	1.0000	1.0000	
22	B091-08	DISS	1.0000	1.0000	
23	TXB005SB	TCLP	1.0000	1.0000	
24	B498-01A	TCLP	1.0000	1.0000	
25	B498-01	TCLP	1.0000	1.0000	
26	B498-01J	TCLP	1.0000	1.0000	
27	CCV3		1.0000	1.0000	
28	CCB3		1.0000	1.0000	
29	B498-01M	TCLP	1.0000	1.0000	
30	B498-01S	TCLP	1.0000	1.0000	
31	HGB009WB		1.0000	1.0000	
32	HGB009WL		1.0000	1.0000	
33	B094-03A		1.0000	1.0000	
34	B094-03		1.0000	1.0000	
35	B094-03J		1.0000	1.0000	
36	B094-03M		1.0000	1.0000	
37	B094-03D		1.0000	1.0000	
38	TXB005SB	TCLP	1.0000	1.0000	
39	CCV4		1.0000	1.0000	
40	CCB4		1.0000	1.0000	
41	B094-02A	TCLP	1.0000	1.0000	
42	B094-02	TCLP	1.0000	1.0000	
43	B094-02J	TCLP	1.0000	1.0000	
44	B094-02M	TCLP	1.0000	1.0000	

NT 2/18/16

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	B094-02D	TCLP	1.0000	1.0000	
2	B091-04A	TOT 5X	1.0000	1.0000	
3	B091-04I	TOT 5X	1.0000	1.0000	
4	B091-04J	TOT 25X	1.0000	1.0000	
5	B091-04M	TOT 5X	1.0000	1.0000	
6	B091-04S	TOT 5X	1.0000	1.0000	
7	CCV5		1.0000	1.0000	
8	CCB5		1.0000	1.0000	
9	B091-02I	TOT 5X	1.0000	1.0000	
10	B091-08I	TOT 5X	1.0000	1.0000	
11	CCV6		1.0000	1.0000	
12	CCB6		1.0000	1.0000	
13			1.0000	1.0000	
14			1.0000	1.0000	
15			1.0000	1.0000	
16			1.0000	1.0000	
17			1.0000	1.0000	
18			1.0000	1.0000	
19			1.0000	1.0000	
20			1.0000	1.0000	
21			1.0000	1.0000	
22			1.0000	1.0000	
23			1.0000	1.0000	
24			1.0000	1.0000	
25			1.0000	1.0000	
26			1.0000	1.0000	
27			1.0000	1.0000	
28			1.0000	1.0000	
29			1.0000	1.0000	
30			1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	

NT 2/18/16

WinHg Database 1.3

File Utility Help

RN RN

Protocol HG1 Dataset/Proto M47B007 /HG1

Protocol | Line Info | Cal Curve | Report | Ctrl Chart | Viewer

Reset

Calib Coeffs

New Cal

Update Coeffs

Spike Coeffs

A

B 1.69015e-5

C -5.68544e-2

Rho .999741

Type Linear

☑ Calibrated

☑ Accepted

Accept

Rel. Abs.
298447

Accepted

New

Include S1 Rep 1 ☑ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Conc. 5.00

S	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3
01	.00000	-.060	-.060	-173	0	-172		
02	.20000	.188	-.012	14513	0%	14512		
03	.50000	.572	.072	37212	0%	37211		
04	1.0000	1.00	.003	62736	0%	62735		
05	2.0000	2.01	.008	122198	0%	122197		
06	5.0000	4.99	-.013	298448	0%	298447		

Ready CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	17:55:03 18 Feb 16	HG		
Hg	.000	ppb	-172					
*** Standard: 2 Rep: 1				Seq: 2	17:57:15 18 Feb 16	HG		
Hg	.200	ppb	14512					
*** Standard: 3 Rep: 1				Seq: 3	17:59:16 18 Feb 16	HG		
Hg	.500	ppb	37211					
*** Standard: 4 Rep: 1				Seq: 4	18:01:17 18 Feb 16	HG		
Hg	1.00	ppb	62735					
*** Standard: 5 Rep: 1				Seq: 5	18:03:19 18 Feb 16	HG		
Hg	2.00	ppb	122197					
*** Standard: 6 Rep: 1				Seq: 6	18:05:20 18 Feb 16	HG		
Hg	5.00	ppb	298447					
*** Sample ID: ICV				Seq: 7	18:10:56 18 Feb 16	HG		
Hg	2.08	ppb	126141					
*** Sample ID: ICB				Seq: 8	18:13:00 18 Feb 16	HG		
Hg	-.068	ppb	-683					
*** Sample ID: CCV1				Seq: 9	18:15:09 18 Feb 16	HG		
Hg	1.98	ppb	120684					
*** Sample ID: CCB1				Seq: 10	18:17:20 18 Feb 16	HG		
Hg	-.043	ppb	811					
*** Sample ID: HGB008WB				Seq: 11	18:19:30 18 Feb 16	HG		
Hg	-.065	ppb	-453					
*** Sample ID: HGB008WL				Seq: 12	18:21:30 18 Feb 16	HG		
Hg	2.56	ppb	154695					
*** Sample ID: HGB008WC				Seq: 13	18:23:44 18 Feb 16	HG		
Hg	2.53	ppb	153167					
*** Sample ID: B091-04A				Seq: 14	18:25:48 18 Feb 16	HG		
Hg	2.74	ppb	TOT 165413					
*** Sample ID: B091-04				Seq: 15	18:28:14 18 Feb 16	HG		
Hg	.491	ppb	TOT 32441					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: B091-04J				Seq: 16	18:30:46 18 Feb 16			HG
			TOT					
Hg	.114	ppb	10084					
*** Sample ID: B091-04M				Seq: 17	18:32:46 18 Feb 16			HG
			TOT					
Hg	2.36	ppb	142965					
*** Sample ID: B091-04S				Seq: 18	18:34:57 18 Feb 16			HG
			TOT					
Hg	2.31	ppb	139843					
*** Sample ID: B091-02				Seq: 19	18:37:09 18 Feb 16			HG
			TOT					
Hg	.001	ppb	3444					
*** Sample ID: B091-08				Seq: 20	18:39:29 18 Feb 16			HG
			TOT					
Hg	.453	ppb	30165					
*** Sample ID: CCV2				Seq: 21	18:41:52 18 Feb 16			HG
Hg	1.98	ppb	120489					
*** Sample ID: CCB2				Seq: 22	18:44:35 18 Feb 16			HG
Hg	-.039	ppb	1052					
*** Sample ID: B091-04A				Seq: 23	18:46:46 18 Feb 16			HG
			DISS					
Hg	2.61	ppb	157900					
*** Sample ID: B091-04				Seq: 24	18:48:47 18 Feb 16			HG
			DISS					
Hg	-.031	ppb	1531					
*** Sample ID: B091-04J				Seq: 25	18:50:52 18 Feb 16			HG
			DISS					
Hg	-.022	ppb	2048					
*** Sample ID: B091-04M				Seq: 26	18:52:54 18 Feb 16			HG
			DISS					
Hg	2.19	ppb	132701					
*** Sample ID: B091-04S				Seq: 27	18:55:09 18 Feb 16			HG
			DISS					
Hg	2.17	ppb	131698					
*** Sample ID: B091-08				Seq: 28	18:57:12 18 Feb 16			HG
			DISS					
Hg	-.073	ppb	-961					
*** Sample ID: TXB005SB				Seq: 29	18:59:23 18 Feb 16			HG
			TCLP					
Hg	.010	ppb	3954					
*** Sample ID: B498-01A				Seq: 30	19:01:32 18 Feb 16			HG
			TCLP					
Hg	2.99	ppb	180263					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: B498-01 Seq: 31 19:03:36 18 Feb 16 HG
TCLP
Hg -.014 ppb 2549

*** Sample ID: B498-01J Seq: 32 19:05:47 18 Feb 16 HG
TCLP
Hg -.017 ppb 2366

*** Sample ID: CCV3 Seq: 33 19:08:18 18 Feb 16 HG

Hg 2.04 ppb 124071

*** Sample ID: CCB3 Seq: 34 19:10:31 18 Feb 16 HG

Hg -.011 ppb 2708

*** Sample ID: B498-01M Seq: 35 19:12:36 18 Feb 16 HG
TCLP
Hg 2.51 ppb 152122

*** Sample ID: B498-01S Seq: 36 19:14:52 18 Feb 16 HG
TCLP
Hg 2.41 ppb 146073

*** Sample ID: HGB009WB Seq: 37 19:16:53 18 Feb 16 HG

Hg -.060 ppb -211

*** Sample ID: HGB009WL Seq: 38 19:19:07 18 Feb 16 HG

Hg 2.53 ppb 152983

*** Sample ID: B094-03A Seq: 39 19:21:29 18 Feb 16 HG

Hg 2.92 ppb 175943

*** Sample ID: B094-03 Seq: 40 19:24:01 18 Feb 16 HG

Hg -.064 ppb -406

*** Sample ID: B094-03J Seq: 41 19:26:02 18 Feb 16 HG

Hg -.009 ppb 2840

*** Sample ID: B094-03M Seq: 42 19:28:03 18 Feb 16 HG

Hg 2.52 ppb 152405

*** Sample ID: B094-03D Seq: 43 19:30:12 18 Feb 16 HG

Hg -.039 ppb 1043

*** Sample ID: TXB005SB Seq: 44 19:32:27 18 Feb 16 HG
TCLP
Hg -.023 ppb 1982

*** Sample ID: CCV4 Seq: 45 19:34:29 18 Feb 16 HG

Hg 1.99 ppb 121133

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCB4				Seq: 46	19:36:30 18 Feb 16			HG
Hg	-.040	ppb	985					
*** Sample ID: B094-02A				Seq: 47	19:38:33 18 Feb 16			HG
			TCLP					
Hg	3.04	ppb	183376					
*** Sample ID: B094-02				Seq: 48	19:40:36 18 Feb 16			HG
			TCLP					
Hg	-.052	ppb	306					
*** Sample ID: B094-02J				Seq: 49	19:42:39 18 Feb 16			HG
			TCLP					
Hg	-.042	ppb	892					
*** Sample ID: B094-02M				Seq: 50	19:45:11 18 Feb 16			HG
			TCLP					
Hg	2.38	ppb	144149					
*** Sample ID: B094-02D				Seq: 51	19:47:13 18 Feb 16			HG
			TCLP					
Hg	-.047	ppb	558					
*** Sample ID: B091-04A				Seq: 52	19:49:17 18 Feb 16			HG
			TOT 5X					
Hg	3.12	ppb	188151					
*** Sample ID: B091-04I				Seq: 53	19:51:23 18 Feb 16			HG
			TOT 5X					
Hg	.086	ppb	8467					
*** Sample ID: B091-04J				Seq: 54	19:53:34 18 Feb 16			HG
			TOT 25X					
Hg	-.005	ppb	3082					
*** Sample ID: B091-04M				Seq: 55	19:55:48 18 Feb 16			HG
			TOT 5X					
Hg	.577	ppb	37528					
*** Sample ID: B091-04S				Seq: 56	19:57:52 18 Feb 16			HG
			TOT 5X					
Hg	.595	ppb	38578					
*** Sample ID: CCV5				Seq: 57	19:59:53 18 Feb 16			HG
Hg	1.94	ppb	118334					
*** Sample ID: CCB5				Seq: 58	20:01:58 18 Feb 16			HG
Hg	-.087	ppb	-1772					
*** Sample ID: B091-02I				Seq: 59	20:03:59 18 Feb 16			HG
			TOT 5X					
Hg	-.046	ppb	619					
*** Sample ID: B091-08I				Seq: 60	20:06:01 18 Feb 16			HG
			TOT 5X					
Hg	.079	ppb	8036					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCV6 Seq: 61 20:09:08 18 Feb 16 HG

Hg 1.97 ppb 120174

*** Sample ID: CCB6 Seq: 62 20:12:04 18 Feb 16 HG

Hg -.048 ppb 534

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 02515001

Samples pH = <2

ICAL on HGB008W

Book #: E47-100

Batch No.: HGB009W

Matrix: Water

SOP #	Rev. #
☑ EMAX-7470	7
☐ EMAX-7471	8
☐ EMAX-245.1	3
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-12-50-07	50	0.2, 0.5, 1, 2, 5
CCV	↓	↓	2
ICV	SM3B-12-50-08	↓	2
LCS/MS	↓	↓	2.5

Reagent	ID / Lot #
HNO_3	SW1A-005-14-09
HCl	N/A
H_2SO_4	SW1A-005-15-01
$KMnO_4$	SM5B-03-67-04
$K_2S_2O_8$	SM5B-03-66-01
$NH_2OH \cdot HCl$	SM5B-03-68-01
$SnCl_2$	SM5B-03-68-02
Silica Sand	N/A
Reagent Water	SM5A-03-02-07
pH strip 0-14	HC 554612
Digestor ID/ Temp (°C)	B / 95-3
Thermometer ID/LOC:	111859904 / B4
Thermometer ID/LOC:	N/A
Pipette ID:	ICP DOE-1, HG-03, HG-04
☑ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder	
☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder	
☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder	

Prepared By: NT

Standard Added By: NT Witnessed By: SP

EMAX LABORATORIES INC

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16HGB009W01	HGB009WB	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W02	HGB009WL	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W03	B094-03	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W04	B094-03M	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W05	B094-03D	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W06	TXB005SB	5	ml	2/18/16 10:18	80	50	80	10	TCLP
16HGB009W07	B094-02	5	ml	2/18/16 10:18	80	50	80	10	TCLP
16HGB009W08	B094-02M	5	ml	2/18/16 10:18	80	50	80	10	TCLP
16HGB009W09	B094-02D	5	ml	2/18/16 10:18	80	50	80	10	TCLP

NT
2/18/16

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 2/18/16 14:10

☑ Digestion Ended @ 2/18/16 16:40

Comments:

Prepared By: NTan

Checked By: NT

Date 2/18/16

SOP EMAX-7470 Rev. 7

TCLP MERCURY

METHOD SW1311/7470A
TCLP MERCURY

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16B094

Matrix : LEACHATE
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGB009WB	ND	1	NA	0.50	0.054	0.10	02/18/1619:16	02/18/1614:10	M47B007037	M47B007	HGB009W	NA	NA
LCS1W	HGB009WL	2.53	1	NA	0.50	0.054	0.10	02/18/1619:19	02/18/1614:10	M47B007038	M47B007	HGB009W	NA	NA
MBLK2W	TXB005SB	ND	1	NA	5.0	0.54	1.0	02/18/1619:32	02/18/1614:10	M47B007044	M47B007	HGB009W	NA	NA
CAFB-IDW-S-022016	B094-02	ND	1	NA	5.0	0.54	1.0	02/18/1619:40	02/18/1614:10	M47B007048	M47B007	HGB009W	02/10/1610:51	02/11/16
CAFB-IDW-S-022016MS	B094-02M	23.8	1	NA	5.0	0.54	1.0	02/18/1619:45	02/18/1614:10	M47B007050	M47B007	HGB009W	02/10/1610:51	02/11/16
CAFB-IDW-S-022016DUP	B094-02D	ND	1	NA	5.0	0.54	1.0	02/18/1619:47	02/18/1614:10	M47B007051	M47B007	HGB009W	02/10/1610:51	02/11/16

DateTime Leached: 02/16/16 17:30
Note: 5 ml leachate was diluted to 50 ml reagent water prior to digestion.

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW1311/7470A

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MBLK1W	LCS1W
LAB SAMPLE ID :	HGB009WB	HGB009WL
LAB FILE ID :	M47B007037	M47B007038
DATE PREPARED :	02/18/1614:10	02/18/1614:10
DATE ANALYZED :	02/18/1619:16	02/18/1619:19
PREP BATCH :	HGB009W	HGB009W
CALIBRATION REF:	M47B0070	M47B0070

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	QC LIMIT (%)
Mercury	ND	2.5	2.53	101	80-120

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW1311/7470A

MATRIX	: LEACHATE	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-S-022016	CAFB-IDW-S-022016MS
LAB SAMPLE ID	: B094-02	B094-02M
LAB FILE ID	: M47B007048	M47B007050
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:40	02/18/1619:45
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
Mercury	ND	25.0	23.8	95	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : URS CORPORATION
PROJECT : CANNON AFB PBR
BATCH NO. : 16B094
METHOD : SW1311/7470A

MATRIX	: LEACHATE	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: CAFB-IDW-S-022016	CAFB-IDW-S-022016DUP
LAB SAMPLE ID	: B094-02	B094-02D
LAB FILE ID	: M47B007048	M47B007051
DATE PREPARED	: 02/18/1614:10	02/18/1614:10
DATE ANALYZED	: 02/18/1619:40	02/18/1619:47
PREP BATCH	: HGB009W	HGB009W
CALIBRATION REF	: M47B007	M47B007

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	DUP RESULT (ug/L)	RPD (%)	MAX RPD (%)
Mercury	ND	ND	0	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 2/18/16 **Start Time:** 17:55

End Date: 2/18/16 **End Time:** 20:12

Comments:

QC OK

B091 Total QC were out of limit due to matrix interference, Diluted at 5X 2mL → 10mL = 5X

Book #:	A47-100
Instrument No.:	47
Analytical Sequence/Batch:	M478007
Method File:	HG1
Micropipette ID:	☐ ICP DOE-1
Micropipette ID:	☑ HG-03
Micropipette ID:	☑ HG-04
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-7470	7
☐ EMAX-7471	8
☐ EMAX-245.1	3
☐ EMAX-	

STANDARDS ID	
S1	BLANK
S2	SM3B-12-50-07
S3	↓
S4	
S5	
S6	
CCV	
ICV	SM3B-12-50-08
LCS	↓
Analytical Spike	
SM3B-12-50-09 TV 3ug/L	

Analyzed By: NT

Date: 2/18/16

"M47B007"

EMAXlfid	EMAXlsid	conc	Raw_resp	rsd/rf	adatetime	DF
M47B007001	STD01REP1	0	-172		02/18/1617:55	1
M47B007002	STD02REP1	.2	14512		02/18/1617:57	1
M47B007003	STD03REP1	.5	37211		02/18/1617:59	1
M47B007004	STD04REP1	1	62735		02/18/1618:01	1
M47B007005	STD05REP1	2	122197		02/18/1618:03	1
M47B007006	STD06REP1	5	298447		02/18/1618:05	1
M47B007007	ICV	2.08	126141	0	02/18/1618:10	1
M47B007008	ICB	-.068	-683	0	02/18/1618:13	1
M47B007009	CCV1	1.98	120684	0	02/18/1618:15	1
M47B007010	CCB1	-.043	811	0	02/18/1618:17	1
M47B007011	HGB008WB	-.065	-453	0	02/18/1618:19	1
M47B007012	HGB008WL	2.56	154695	0	02/18/1618:21	1
M47B007013	HGB008WC	2.53	153167	0	02/18/1618:23	1
M47B007014	B091-04A	2.74	165413	0	02/18/1618:25	1
M47B007015	B091-04	.491	32441	0	02/18/1618:28	1
M47B007016	B091-04J	.114	10084	0	02/18/1618:30	5
M47B007017	B091-04M	2.36	142965	0	02/18/1618:32	1
M47B007018	B091-04S	2.31	139843	0	02/18/1618:34	1
M47B007019	B091-02	.001	3444	0	02/18/1618:37	1
M47B007020	B091-08	.453	30165	0	02/18/1618:39	1
M47B007021	CCV2	1.98	120489	0	02/18/1618:41	1
M47B007022	CCB2	-.039	1052	0	02/18/1618:44	1
M47B007023	B091-04A	2.61	157900	0	02/18/1618:46	1
M47B007024	B091-04	-.031	1531	0	02/18/1618:48	1
M47B007025	B091-04J	-.022	2048	0	02/18/1618:50	5
M47B007026	B091-04M	2.19	132701	0	02/18/1618:52	1
M47B007027	B091-04S	2.17	131698	0	02/18/1618:55	1
M47B007028	B091-08	-.073	-961	0	02/18/1618:57	1
M47B007029	TXB005SB	.01	3954	0	02/18/1618:59	1
M47B007030	B498-01A	2.99	180263	0	02/18/1619:01	1
M47B007031	B498-01	-.014	2549	0	02/18/1619:03	1
M47B007032	B498-01J	-.017	2366	0	02/18/1619:05	5
M47B007033	CCV3	2.04	124071	0	02/18/1619:08	1
M47B007034	CCB3	-.011	2708	0	02/18/1619:10	1
M47B007035	B498-01M	2.51	152122	0	02/18/1619:12	1
M47B007036	B498-01S	2.41	146073	0	02/18/1619:14	1
M47B007037	HGB009WB	-.06	-211	0	02/18/1619:16	1
M47B007038	HGB009WL	2.53	152983	0	02/18/1619:19	1
M47B007039	B094-03A	2.92	175943	0	02/18/1619:21	1
M47B007040	B094-03	-.064	-406	0	02/18/1619:24	1
M47B007041	B094-03J	-.009	2840	0	02/18/1619:26	5
M47B007042	B094-03M	2.52	152405	0	02/18/1619:28	1
M47B007043	B094-03D	-.039	1043	0	02/18/1619:30	1
M47B007044	TXB005SB	-.023	1982	0	02/18/1619:32	1
M47B007045	CCV4	1.99	121133	0	02/18/1619:34	1
M47B007046	CCB4	-.04	985	0	02/18/1619:36	1
M47B007047	B094-02A	3.04	183376	0	02/18/1619:38	1
M47B007048	B094-02	-.052	306	0	02/18/1619:40	1
M47B007049	B094-02J	-.042	892	0	02/18/1619:42	5
M47B007050	B094-02M	2.38	144149	0	02/18/1619:45	1
M47B007051	B094-02D	-.047	558	0	02/18/1619:47	1
M47B007052	B091-04A	3.12	188151	0	02/18/1619:49	5
M47B007053	B091-04I	.086	8467	0	02/18/1619:51	5
M47B007054	B091-04J	-.005	3082	0	02/18/1619:53	25
M47B007055	B091-04M	.577	37528	0	02/18/1619:55	5
M47B007056	B091-04S	.595	38578	0	02/18/1619:57	5
M47B007057	CCV5	1.94	118334	0	02/18/1619:59	1
M47B007058	CCB5	-.087	-1772	0	02/18/1620:01	1
M47B007059	B091-02I	-.046	619	0	02/18/1620:03	5
M47B007060	B091-08I	.079	8036	0	02/18/1620:06	5
M47B007061	CCV6	1.97	120174	0	02/18/1620:09	1
M47B007062	CCB6	-.048	534	0	02/18/1620:12	1
**********	**********	**********	**********	**********	**********	***
EMAXlfid	EMAXlsid	Xint	Yint	rrf	adatetime	DF
M47B007001	BLANK	-6.618147E-02	3891.624	.9998381	02/18/1620:12	1

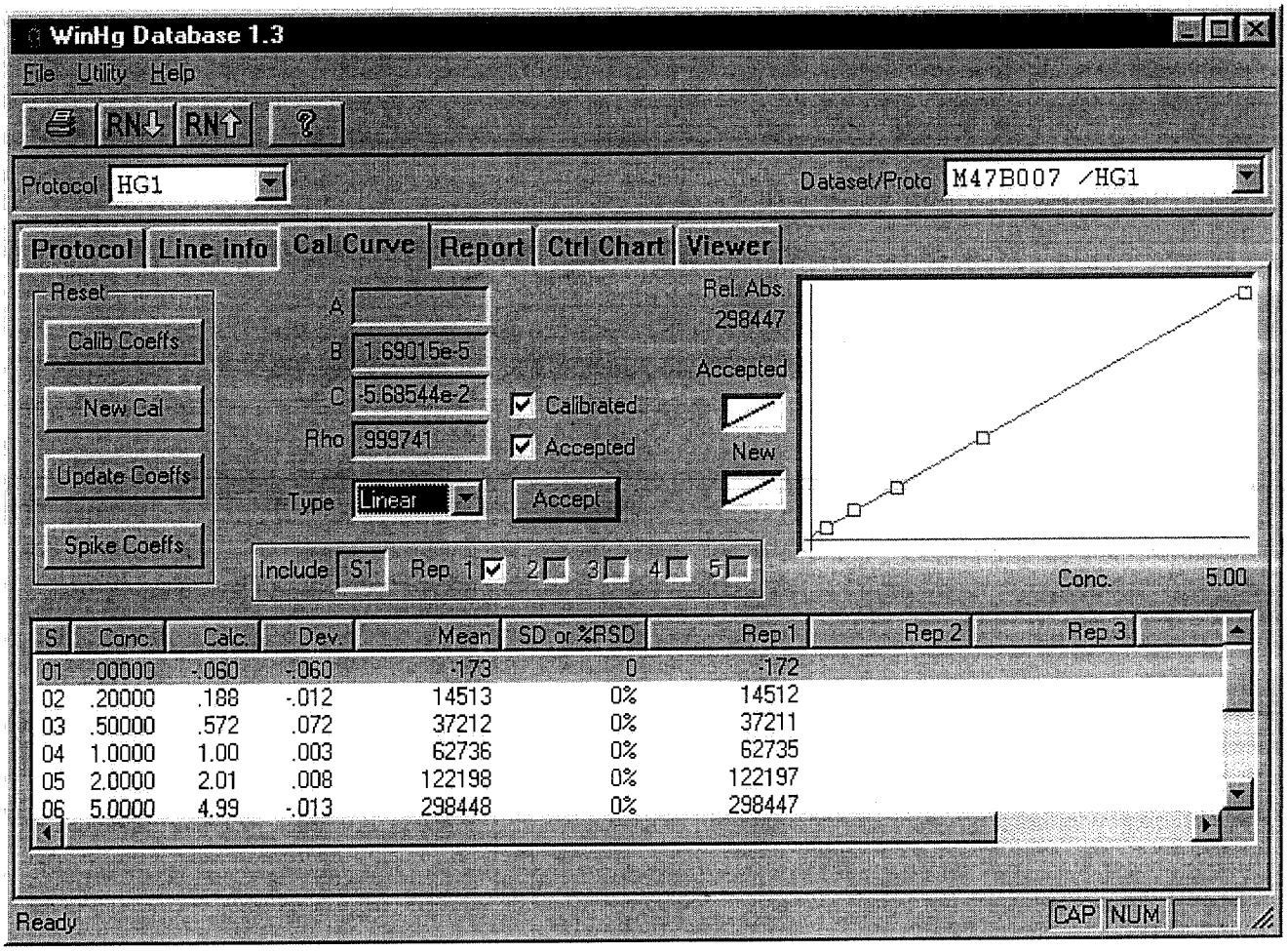
M47B007

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	CCV1		1.0000	1.0000	
4	CCB1		1.0000	1.0000	
5	HGB008WB		1.0000	1.0000	
6	HGB008WL		1.0000	1.0000	
7	HGB008WC		1.0000	1.0000	
8	B091-04A	TOT	1.0000	1.0000	
9	B091-04	TOT	1.0000	1.0000	
10	B091-04J	TOT	1.0000	1.0000	
11	B091-04M	TOT	1.0000	1.0000	
12	B091-04S	TOT	1.0000	1.0000	
13	B091-02	TOT	1.0000	1.0000	
14	B091-08	TOT	1.0000	1.0000	
15	CCV2		1.0000	1.0000	
16	CCB2		1.0000	1.0000	
17	B091-04A	DISS	1.0000	1.0000	
18	B091-04	DISS	1.0000	1.0000	
19	B091-04J	DISS	1.0000	1.0000	
20	B091-04M	DISS	1.0000	1.0000	
21	B091-04S	DISS	1.0000	1.0000	
22	B091-08	DISS	1.0000	1.0000	
23	TXB005SB	TCLP	1.0000	1.0000	
24	B498-01A	TCLP	1.0000	1.0000	
25	B498-01	TCLP	1.0000	1.0000	
26	B498-01J	TCLP	1.0000	1.0000	
27	CCV3		1.0000	1.0000	
28	CCB3		1.0000	1.0000	
29	B498-01M	TCLP	1.0000	1.0000	
30	B498-01S	TCLP	1.0000	1.0000	
31	HGB009WB		1.0000	1.0000	
32	HGB009WL		1.0000	1.0000	
33	B094-03A		1.0000	1.0000	
34	B094-03		1.0000	1.0000	
35	B094-03J		1.0000	1.0000	
36	B094-03M		1.0000	1.0000	
37	B094-03D		1.0000	1.0000	
38	TXB005SB	TCLP	1.0000	1.0000	
39	CCV4		1.0000	1.0000	
40	CCB4		1.0000	1.0000	
41	B094-02A	TCLP	1.0000	1.0000	
42	B094-02	TCLP	1.0000	1.0000	
43	B094-02J	TCLP	1.0000	1.0000	
44	B094-02M	TCLP	1.0000	1.0000	

NT 2/18/16

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	B094-02D	TCLP	1.0000	1.0000	
2	B091-04A	TOT 5X	1.0000	1.0000	
3	B091-04I	TOT 5X	1.0000	1.0000	
4	B091-04J	TOT 25X	1.0000	1.0000	
5	B091-04M	TOT 5X	1.0000	1.0000	
6	B091-04S	TOT 5X	1.0000	1.0000	
7	CCV5		1.0000	1.0000	
8	CCB5		1.0000	1.0000	
9	B091-02I	TOT 5X	1.0000	1.0000	
10	B091-08I	TOT 5X	1.0000	1.0000	
11	CCV6		1.0000	1.0000	
12	CCB6		1.0000	1.0000	
13			1.0000	1.0000	
14			1.0000	1.0000	
15			1.0000	1.0000	
16			1.0000	1.0000	
17			1.0000	1.0000	
18			1.0000	1.0000	
19			1.0000	1.0000	
20			1.0000	1.0000	
21			1.0000	1.0000	
22			1.0000	1.0000	
23			1.0000	1.0000	
24			1.0000	1.0000	
25			1.0000	1.0000	
26			1.0000	1.0000	
27			1.0000	1.0000	
28			1.0000	1.0000	
29			1.0000	1.0000	
30			1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	

NT 2/18/16


WinHg Database 1.3
File Utility Help
Protocol HG1
Dataset/Proto M47B007 /HG1
Protocol
Line Info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 1.69015e-5
C -5.68544e-2
Rho .999741
Type Linear
Calibrated
Accepted
Accept
Rel. Abs.
298447
Accepted
New
Include S1 Rep. 1 2 3 4 5
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.060 -.060 -173 0 -172
02 .20000 .188 -.012 14513 0% 14512
03 .50000 .572 .072 37212 0% 37211
04 1.0000 1.00 .003 62736 0% 62735
05 2.0000 2.01 .008 122198 0% 122197
06 5.0000 4.99 -.013 298448 0% 298447
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	17:55:03 18 Feb 16	HG		
Hg	.000	ppb	-172					
*** Standard: 2 Rep: 1				Seq: 2	17:57:15 18 Feb 16	HG		
Hg	.200	ppb	14512					
*** Standard: 3 Rep: 1				Seq: 3	17:59:16 18 Feb 16	HG		
Hg	.500	ppb	37211					
*** Standard: 4 Rep: 1				Seq: 4	18:01:17 18 Feb 16	HG		
Hg	1.00	ppb	62735					
*** Standard: 5 Rep: 1				Seq: 5	18:03:19 18 Feb 16	HG		
Hg	2.00	ppb	122197					
*** Standard: 6 Rep: 1				Seq: 6	18:05:20 18 Feb 16	HG		
Hg	5.00	ppb	298447					
*** Sample ID: ICV				Seq: 7	18:10:56 18 Feb 16	HG		
Hg	2.08	ppb	126141					
*** Sample ID: ICB				Seq: 8	18:13:00 18 Feb 16	HG		
Hg	-.068	ppb	-683					
*** Sample ID: CCV1				Seq: 9	18:15:09 18 Feb 16	HG		
Hg	1.98	ppb	120684					
*** Sample ID: CCB1				Seq: 10	18:17:20 18 Feb 16	HG		
Hg	-.043	ppb	811					
*** Sample ID: HGB008WB				Seq: 11	18:19:30 18 Feb 16	HG		
Hg	-.065	ppb	-453					
*** Sample ID: HGB008WL				Seq: 12	18:21:30 18 Feb 16	HG		
Hg	2.56	ppb	154695					
*** Sample ID: HGB008WC				Seq: 13	18:23:44 18 Feb 16	HG		
Hg	2.53	ppb	153167					
*** Sample ID: B091-04A				Seq: 14	18:25:48 18 Feb 16	HG		
Hg	2.74	ppb	TOT 165413					
*** Sample ID: B091-04				Seq: 15	18:28:14 18 Feb 16	HG		
Hg	.491	ppb	TOT 32441					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: B091-04J				Seq: 16	18:30:46 18 Feb 16			HG
			TOT					
Hg	.114	ppb	10084					
*** Sample ID: B091-04M				Seq: 17	18:32:46 18 Feb 16			HG
			TOT					
Hg	2.36	ppb	142965					
*** Sample ID: B091-04S				Seq: 18	18:34:57 18 Feb 16			HG
			TOT					
Hg	2.31	ppb	139843					
*** Sample ID: B091-02				Seq: 19	18:37:09 18 Feb 16			HG
			TOT					
Hg	.001	ppb	3444					
*** Sample ID: B091-08				Seq: 20	18:39:29 18 Feb 16			HG
			TOT					
Hg	.453	ppb	30165					
*** Sample ID: CCV2				Seq: 21	18:41:52 18 Feb 16			HG
Hg	1.98	ppb	120489					
*** Sample ID: CCB2				Seq: 22	18:44:35 18 Feb 16			HG
Hg	-.039	ppb	1052					
*** Sample ID: B091-04A				Seq: 23	18:46:46 18 Feb 16			HG
			DISS					
Hg	2.61	ppb	157900					
*** Sample ID: B091-04				Seq: 24	18:48:47 18 Feb 16			HG
			DISS					
Hg	-.031	ppb	1531					
*** Sample ID: B091-04J				Seq: 25	18:50:52 18 Feb 16			HG
			DISS					
Hg	-.022	ppb	2048					
*** Sample ID: B091-04M				Seq: 26	18:52:54 18 Feb 16			HG
			DISS					
Hg	2.19	ppb	132701					
*** Sample ID: B091-04S				Seq: 27	18:55:09 18 Feb 16			HG
			DISS					
Hg	2.17	ppb	131698					
*** Sample ID: B091-08				Seq: 28	18:57:12 18 Feb 16			HG
			DISS					
Hg	-.073	ppb	-961					
*** Sample ID: TXB005SB				Seq: 29	18:59:23 18 Feb 16			HG
			TCLP					
Hg	.010	ppb	3954					
*** Sample ID: B498-01A				Seq: 30	19:01:32 18 Feb 16			HG
			TCLP					
Hg	2.99	ppb	180263					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: B498-01 Seq: 31 19:03:36 18 Feb 16 HG
TCLP
Hg -.014 ppb 2549

*** Sample ID: B498-01J Seq: 32 19:05:47 18 Feb 16 HG
TCLP
Hg -.017 ppb 2366

*** Sample ID: CCV3 Seq: 33 19:08:18 18 Feb 16 HG

Hg 2.04 ppb 124071

*** Sample ID: CCB3 Seq: 34 19:10:31 18 Feb 16 HG

Hg -.011 ppb 2708

*** Sample ID: B498-01M Seq: 35 19:12:36 18 Feb 16 HG
TCLP
Hg 2.51 ppb 152122

*** Sample ID: B498-01S Seq: 36 19:14:52 18 Feb 16 HG
TCLP
Hg 2.41 ppb 146073

*** Sample ID: HGB009WB Seq: 37 19:16:53 18 Feb 16 HG

Hg -.060 ppb -211

*** Sample ID: HGB009WL Seq: 38 19:19:07 18 Feb 16 HG

Hg 2.53 ppb 152983

*** Sample ID: B094-03A Seq: 39 19:21:29 18 Feb 16 HG

Hg 2.92 ppb 175943

*** Sample ID: B094-03 Seq: 40 19:24:01 18 Feb 16 HG

Hg -.064 ppb -406

*** Sample ID: B094-03J Seq: 41 19:26:02 18 Feb 16 HG

Hg -.009 ppb 2840

*** Sample ID: B094-03M Seq: 42 19:28:03 18 Feb 16 HG

Hg 2.52 ppb 152405

*** Sample ID: B094-03D Seq: 43 19:30:12 18 Feb 16 HG

Hg -.039 ppb 1043

*** Sample ID: TXB005SB Seq: 44 19:32:27 18 Feb 16 HG
TCLP
Hg -.023 ppb 1982

*** Sample ID: CCV4 Seq: 45 19:34:29 18 Feb 16 HG

Hg 1.99 ppb 121133

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB4 Seq: 46 19:36:30 18 Feb 16 HG

Hg -.040 ppb 985

*** Sample ID: B094-02A Seq: 47 19:38:33 18 Feb 16 HG
TCLP
Hg 3.04 ppb 183376

*** Sample ID: B094-02 Seq: 48 19:40:36 18 Feb 16 HG
TCLP
Hg -.052 ppb 306

*** Sample ID: B094-02J Seq: 49 19:42:39 18 Feb 16 HG
TCLP
Hg -.042 ppb 892

*** Sample ID: B094-02M Seq: 50 19:45:11 18 Feb 16 HG
TCLP
Hg 2.38 ppb 144149

*** Sample ID: B094-02D Seq: 51 19:47:13 18 Feb 16 HG
TCLP
Hg -.047 ppb 558

*** Sample ID: B091-04A Seq: 52 19:49:17 18 Feb 16 HG
TOT 5X
Hg 3.12 ppb 188151

*** Sample ID: B091-04I Seq: 53 19:51:23 18 Feb 16 HG
TOT 5X
Hg .086 ppb 8467

*** Sample ID: B091-04J Seq: 54 19:53:34 18 Feb 16 HG
TOT 25X
Hg -.005 ppb 3082

*** Sample ID: B091-04M Seq: 55 19:55:48 18 Feb 16 HG
TOT 5X
Hg .577 ppb 37528

*** Sample ID: B091-04S Seq: 56 19:57:52 18 Feb 16 HG
TOT 5X
Hg .595 ppb 38578

*** Sample ID: CCV5 Seq: 57 19:59:53 18 Feb 16 HG

Hg 1.94 ppb 118334

*** Sample ID: CCB5 Seq: 58 20:01:58 18 Feb 16 HG

Hg -.087 ppb -1772

*** Sample ID: B091-02I Seq: 59 20:03:59 18 Feb 16 HG
TOT 5X
Hg -.046 ppb 619

*** Sample ID: B091-08I Seq: 60 20:06:01 18 Feb 16 HG
TOT 5X
Hg .079 ppb 8036

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCV6 Seq: 61 20:09:08 18 Feb 16 HG

Hg 1.97 ppb 120174

*** Sample ID: CCB6 Seq: 62 20:12:04 18 Feb 16 HG

Hg -.048 ppb 534

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 02515001

Samples PH =<2

ICAL on HGB008W

Book #: E47-100

Batch No.: HGB009W

Matrix: Water

SOP #	Rev. #
☑ EMAX-7470	7
☐ EMAX-7471	8
☐ EMAX-245.1	3
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-12-50-07	50	0.2, 0.5, 1, 2, 5
CCV	↓	↓	2
ICV	SM3B-12-50-08	↓	2
LCS/MS	↓	↓	2.5

Reagent	ID / Lot #
HNO_3	SW1A-005-14-09
HCl	N/A
H_2SO_4	SW1A-005-15-01
$KMnO_4$	SM5B-03-67-04
$K_2S_2O_8$	SM5B-03-66-01
$NH_2OH \cdot HCl$	SM5B-03-68-01
$SnCl_2$	SM5B-03-68-02
Silica Sand	N/A
Reagent Water	SM5A-03-02-07
pH strip 0-14	HC 554612

Digestor ID/ Temp (°C): B / 95-3

Thermometer ID/LOC: 111859904 / B4

Thermometer ID/LOC: N/A

Pipette ID: ICP DOE-1, HG-03, HG-04

☑ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder

☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder

☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder

Prepared By: NT

Standard Added By: NT Witnessed By: SP

EMAX LABORATORIES, INC.

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
16HGB009W01	HGB009WB	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W02	HGB009WL	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W03	B094-03	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W04	B094-03M	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W05	B094-03D	50	ml	2/18/16 10:18	80	50	80	1	
16HGB009W06	TXB005SB	5	ml	2/18/16 10:18	80	50	80	10	TCLP
16HGB009W07	B094-02	5	ml	2/18/16 10:18	80	50	80	10	TCLP
16HGB009W08	B094-02M	5	ml	2/18/16 10:18	80	50	80	10	TCLP
16HGB009W09	B094-02D	5	ml	2/18/16 10:18	80	50	80	10	TCLP

NT
2/18/16

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 2/18/16 14:10

☑ Digestion Ended @ 2/18/16 16:40

Comments:

Prepared By: NTan

Checked By: NT

Date 2/18/16

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	TCLPSoln	TCLPVol	Exrtract pH	Preservation	Comments
16TXB005S01	TXB005SB	0	g	2/16/16 14:34		2000		HNO_3	
16TXB005S02	A134-01	100	g	2/16/16 14:41	#1	2000	5.06	HNO_3	for Cr only
16TXB005S03	A134-02	100.03	g	2/16/16 14:43	#1	2000	5.05	HNO_3	for Cr, Pb
16TXB005S04	A134-03	100	g	2/16/16 14:46	#1	2000	5.26	HNO_3	for Pb only
16TXB005S05	A206-01	100	g	2/16/16 14:48	#1	2000	5.79	HNO_3	for Pb only
16TXB005S06	B094-02	100.01	g	2/16/16 14:50	#1	2000	5.08	HNO_3	for 8270, 8151, 8081, Metals, & Hg... (UNPRESERVED)
16TXB005S07	B498-01	90	g	2/16/16 14:53	#1	1800	4.84	HNO_3	7 elements + Hg

☑ DateTimeStarted 2/16/2016 17:30 ☑ Thermometer Reset on 2/16/2016 17:30 Balance ID: 10203192. Calibration check was verified prior to use.

☑ DateTimeEnded 2/17/2016 11:30 Note: Sample preserved with HNO_3 is for metals analysis. MS/MSD were spiked prio Prepared By: DFelic

Extract Location: Metals Received By: SP Checked By: ML

Comment: 02/17/16 Date 2/17/16

B498

FileID: TXB005S

EMAX LABORATORIES, INC.

TCLP EXTRACTION LOG

Determination of TLCP Solution							Determination of TCLP Extract Filtration			Determination of % solids for aqueos phase			
LabSampleID	Phase(s)	Aliquot	Sample pH	HCl	pH	TCLPSolnReq'd	(ml)	(g)	Pressure	WtS(g)	WtF(g)	WtDFS(g)	% Solids
TXB005SB							100						
A134-01	1	5.01	8.54	3.5	1.45	#1	100	97.71	Vacuum				
A134-02	1	5	8.08	3.5	1.42	#1	100	98.59	Vacuum				
A134-03	1	5.02	8.17	3.5	1.47	#1	100	98.83	Vacuum				
A206-01	1	5	8.23	3.5	1.53	#1	100	98.56	Vacuum				
B094-02	1	5.01	8.83	3.5	1.46	#1	100	98.40	Vacuum				
B498-01	1	5.02	5.63	3.5	1.53	#1	100	97.36	Vacuum				

Calibration of pH Meter		InstrumentID:	96
BufferID	Value	Reading	DateTime
SW1-01-780	4	4.01	2/16/16 17:18
SW1-01-794	7	7	2/16/16 17:17
SW1A-005-12-24	CalVer 5	5.03	2/16/16 17:19
SW1-01-780	4	4.01	2/17/16 15:58
SW1-01-794	7	7	2/17/16 15:56
SW1A-005-12-24	CalVer 5	5.03	2/17/16 15:59
ID	Reagent	Desc	Expiration Date
SP1A-07-01-08	HCl	1N	04/01/17
SW1A-005-14-09	HNO_3	Conc	04/29/17
SP1B-08-54-04	TCLP Soln	#1	08/09/16
SP1B-08-56-02	TCLP Soln	#1	08/16/16
Rotary Agitator #	Criteria	rpm	DateTime
1	30 ± 2 rpm	30	2/16/16 17:20
	30 ± 2 rpm		
Thermostat Setting:	73 F /23 C	Thermometer ID:	122273404
TCLP Room Temperature	Criteria	Rdg	DateTime
Room Temp (°C) High	23 ± 2 °C	23.4	2/17/16 9:20
Room Temp (°C) Low	23 ± 2 °C	21.9	2/17/16 0:13
Pipette ID	PE00-01		
CONCENTRATOR (WATER BATH)			
Concentrator #	Temp Setting	Thermometer Rdg	Thermometer ID
5	50	50	SVOC-T1
Filter ID/Lot #	103013/062513		
pH strip Lot#	HC554612		

Legend:

WtS = weight of sample

WtF = weight of filter

WtDFS = weight of dried filter + solids

Prepared By: DFelic

Checked By: ML

Date 2/17/16

PAINT FILTER LIQUID TEST

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16B094

METHOD SW9095B
PAINT FILTER LIQUID TEST

One (1) soil sample was received on 02/11/16 to be analyzed for Paint Filter Liquid Test in accordance with Method SW9095B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9095B
Paint Filter Liquid Test

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16B094

Matrix : SOIL
Instrument ID : NA

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ml)	DLF	MOIST	LOQ (ml)	LOD (ml)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
CAFB-IDW-S-022016	B094-02	ND	1	NA	5.00	NA	02/11/1618:41	NA	PFB00101	PFB001	PFB001S	02/10/1610:51	02/11/16

EMAX LABORATORIES, INC.

PAINT FILTER LIQUID ANALYSIS LOG

SOP ☑ EMAX-9095 Rev. No. 3 ☐ EMAX- Conical Paint Filter Used: 60 Mesh Temp (°C): NA Book # A45-004

Start Date/Time: 02/11/16 End Date/Time: 02/11/16

ANALYTICAL BATCH * PFB001

Date File Name	Analytical Batch	Lab Sample ID	Matrix	Sample Amt (g/ml)	Run Time (min)	Time Lapsed (min)	Filtrate Vol Collected (ml)	Free Liquids/ Results (ml/min)
1	PFB001	B094-02	Soil	100.01	18:36-18:41	5	0	NO
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								TK 02/11/16

Comments:
Not enough sample for duplicate.

Balance ID: 10203192
Filter ID: SWRI-01-866

Analyzed by TK
Date 02/11/16

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16D201**

I certify this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than that the conditions detailed in the report. Release of the data contained in this hardcopy data package and in the computer-readable data submitted in CD ROM has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Caspar J. Pang
Laboratory Director

LABORATORY REPORT

CLIENT: **URS CORPORATION**

PROJECT: **CANNON AFB PBR**

SDG: **16D201**

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LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-02-2016
EMAX Batch No.: 16D201

Attn: Jeff Aust

URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

Subject: Laboratory Report
Project: CANNON AFB PBR

Enclosed is the Laboratory report for samples received on 04/29/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
CAFB-IDW-S-042816	D201-01	04/28/16	SOIL	DRO & ORO GASOLINE RANGE ORGANICS

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.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16D201

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

One (1) soil sample was received on 04/29/16 to be analyzed for Gasoline Range Organics by Purge and Trap in accordance with Method SW5035A/8015C and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. GPD012SB - 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. GPD012SL/GPD012SC was within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : URS CORPORATION

Project: CANNON AFB PBR

SDG : 16D201

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION
OIL RANGE ORGANICS BY EXTRACTION

One (1) soil sample was received on 04/29/16 to be analyzed for Diesel Range Organics by Extraction and Oil Range Organics by Extraction in accordance with Method SW3550B/8015C and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. DSD037SB - 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 DSD037SL/DSD037SC. ORO was within LCS QC limits in DSD037SX/DSD037SY. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

SAMPLE RECEIPT FORM 1 Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN KeD201
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7829 4574 4876	Recipient Sheri Fama
☐ EMAX Courier ☐ Client Delivery		Date 04-29-16 Time 0940

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	☑ plastic bag
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.5 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	*A - S/N* 130538505 SF 04/29/16	*B - S/N* 140252070	*C - S/N* 140252067	*D - S/N* 150555630	FM 2/8/16

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	1-2	D10		OK
	3	D3	Label: CAFB-IDW-042816	R1
			04/29/16	

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND: ☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in _____	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	
D10	No initial/date on corrections in COC/label	D22		R10	
D11	Container count mismatch COC vs received	D23		R11	
D12	Container size mismatch COC vs received	D24		R12	

REVIEWS:

Sample Labeling Date 4/29/16 4/29/16 **SRF** Date 4/29/16 **PM** Date 4/29/16

ORIGIN ID:CVNA (402) 321-0977
KYLE KLOEWER
URS GCP
12120 SHAMROCK PLZ STE 100

OMAHA, NE 68154
UNITED STATES US

SHIP DATE: 28APR16
ACTWGT: 11.40 LB
CAD: 006993959/SSFE1703
DIMS: 12x10x7 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 12/15

TO **SAMPLE CUSTODIAN**
EMAX LABORATORIES
1835 WEST 205TH STREET

TORRANCE CA 90501
(310) 618-0818
INV:
PO: REF:
DEPT:

FedEx Express

REL#
3785346

TRK# 0201 **7829 4574 4876**

FRI - 29 APR 10:30A
PRIORITY OVERNIGHT

A7 HHRA

90501
CA-US **LAX**

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: Cannon AFB Clovis, NM
Project Manager: Mike Sonderman
Sampler(s): K. Kloewer, J. Carritt

KeD201

Analytical Parameters

Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	TPH-GRO 8015C	TPH-DRO/ORO 8015C	Preservative / Remarks
04/28/16	15:00	X		CAFB-IDW-S-042816	Soil	2	40 mL VOA	X		MeOH
↓	↓	X		↓	↓	1	4 oz glass jar		X	

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: Jeffrey Carritt	4/28/16	17:00	Method of Shipment: Fed EX	24 Hour TAT
Received by:			Airbill No.:	
Relinquished by:			Lab Address: Sample Custodian, Emax Laboratories, 1835 West 205th St.	
Received for Laboratory by:	042916	0940		Temp = 3.5°C

P Drive/Office Administration/Chain of Custody Form (Nov 2012)

White copy - Laboratory Yellow copy - Laboratory Pink copy - URS

Torrance, CA 90501

130420

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 or estimated value.
*	*	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.

LAB CHRONICLE
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16D201
Instrument ID : GCT039

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	GPD012SB	1	NA	04/30/1608:07	04/30/1608:07	ED29031A	ED29026A	GPD012S	Method Blank
LCS1S	GPD012SL	1	NA	04/30/1608:45	04/30/1608:45	ED29032A	ED29026A	GPD012S	Lab Control Sample (LCS)
LCD1S	GPD012SC	1	NA	04/30/1609:24	04/30/1609:24	ED29033A	ED29026A	GPD012S	LCS Duplicate
CAFB-IDW-S-042816	D201-01	0.69	20.3	04/30/1610:42	04/30/1610:42	ED29035A	ED29026A	GPD012S	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
DIESEL RANGE ORGANICS BY EXTRACTION

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16D201
Instrument ID : D5

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	DSD037SB	1	NA	04/29/1620:18	04/29/1614:40	LD29037A	LD29035A	DSD037S	Method Blank
LCS1S	DSD037SL	1	NA	04/29/1620:35	04/29/1614:40	LD29038A	LD29035A	DSD037S	Lab Control Sample (LCS)
LCD1S	DSD037SC	1	NA	04/29/1620:52	04/29/1614:40	LD29039A	LD29035A	DSD037S	LCS Duplicate
CAFB-IDW-S-042816	D201-01	1	20.3	04/29/1621:43	04/29/1614:40	LD29042A	LD29035A	DSD037S	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
OIL RANGE ORGANICS BY EXTRACTION

Client : URS CORPORATION
Project : CANNON AFB PBR

SDG NO. : 16D201
Instrument ID : D5

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	DSD037SB	1	NA	04/29/1620:18	04/29/1614:40	LD29037A	LD29035A	DSD037S	Method Blank
LCS1S	DSD037SX	1	NA	04/29/1621:09	04/29/1614:40	LD29040A	LD29035A	DSD037S	Lab Control Sample (LCS)
LCD1S	DSD037SY	1	NA	04/29/1621:26	04/29/1614:40	LD29041A	LD29035A	DSD037S	LCS Duplicate
CAFB-IDW-S-042816	D201-01	1	20.3	04/29/1621:43	04/29/1614:40	LD29042A	LD29035A	DSD037S	Field Sample

FN - Filename
% Moist - Percent Moisture

RESULTS SUMMARIES

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client	: URS CORPORATION	Date Collected:	04/28/16
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/30/16 10:42
Sample ID:	CAFB-IDW-S-042816	Date Analyzed:	04/30/16 10:42
Lab Samp ID:	D201-01	Dilution Factor:	0.69
Lab File ID:	ED29035A	Matrix :	SOIL
Ext Btch ID:	GPD012S	% Moisture :	20.3
Calib. Ref.:	ED29026A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	0.87	0.22	0.43

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	1.34	1.731	77.3	67-134

Parameter	H-C Range
GRO	C6-C10

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	04/28/16
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID:	CAFB-IDW-S-042816	Date Analyzed:	04/29/16 21:43
Lab Samp ID:	D201-01	Dilution Factor:	1
Lab File ID:	LD29042A	Matrix :	SOIL
Ext Btch ID:	DSD037S	% Moisture :	20.3
Calib. Ref.:	LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	13	3.1	6.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	101	125.5	80.5	60-130
HEXACOSANE	30.7	31.37	97.8	60-130

Parameter	H-C Range
DRO	C10-C24

METHOD SW3550B/8015C
OIL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	04/28/16
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID:	CAFB-IDW-S-042816	Date Analyzed:	04/29/16 21:43
Lab Samp ID:	D201-01	Dilution Factor:	1
Lab File ID:	LD29042A	Matrix :	SOIL
Ext Btch ID:	DSD037S	% Moisture :	20.3
Calib. Ref.:	LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
ORO	ND	25	3.1	6.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	101	125.5	80.5	60-130
HEXACOSANE	30.7	31.37	97.8	60-130

Parameter	H-C Range
ORO	C24-C36

QC SUMMARIES

METHOD BLANK

Method: 8015C

QC Measure: GPD012SB

Associated Samples:

CAFB-IDW-S-042816

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	04/30/16
Batch No.	: 16D201	Date Extracted:	04/30/16 08:07
Sample ID:	MBLK1S	Date Analyzed:	04/30/16 08:07
Lab Samp ID:	GPD012SB	Dilution Factor:	1
Lab File ID:	ED29031A	Matrix :	SOIL
Ext Btch ID:	GPD012S	% Moisture :	NA
Calib. Ref.:	ED29026A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	1.70	2.000	85.0	67-134

Parameter	H-C Range
GRO	C6-C10

Method: 8015C

QC Measure: DSD037SB

Associated Samples:

CAFB-IDW-S-042816

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID:	MBLK1S	Date Analyzed:	04/29/16 20:18
Lab Samp ID:	DSD037SB	Dilution Factor:	1
Lab File ID:	LD29037A	Matrix :	SOIL
Ext Btch ID:	DSD037S	% Moisture :	NA
Calib. Ref.:	LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	84.5	100.0	84.5	60-130
HEXACOSANE	23.7	25.00	94.8	60-130

Parameter	H-C Range
DRO	C10-C24

Method: 8015C

QC Measure: DSD037SB

Associated Samples:

CAFB-IDW-S-042816

METHOD SW3550B/8015C
OIL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID	: MBLK1S	Date Analyzed:	04/29/16 20:18
Lab Samp ID	: DSD037SB	Dilution Factor:	1
Lab File ID	: LD29037A	Matrix :	SOIL
Ext Btch ID	: DSD037S	% Moisture :	NA
Calib. Ref.	: LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
ORO	ND	20	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	84.5	100.0	84.5	60-130
HEXACOSANE	23.7	25.00	94.8	60-130

Parameter	H-C Range
ORO	C24-C36

LCS/LCSD

Method: 8015C

QC Measure: GPD012SL

Associated Samples:

CAFB-IDW-S-042816

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16D201
METHOD: SW5035A/8015C

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	GPD012SB	GPD012SL	GPD012SC		
LAB FILE ID:	ED29031A	ED29032A	ED29033A		
DATE EXTRACTED:	04/30/1608:07	04/30/1608:45	04/30/1609:24	DATE COLLECTED:	NA
DATE ANALYZED:	04/30/1608:07	04/30/1608:45	04/30/1609:24	DATE RECEIVED:	04/30/16
PREP. BATCH:	GPD012S	GPD012S	GPD012S		
CALIB. REF:	ED29026A	ED29026A	ED29026A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
GRO	ND	25.0	21.9	87	25.0	22.0	88	1	50-150	30

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	2.00	1.86	93	2.00	1.80	90	67-134

Method: 8015C

QC Measure: DSD037SL

Associated Samples:

CAFB-IDW-S-042816

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16D201
METHOD: SW3550B/8015C

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	DSD037SB	DSD037SL	DSD037SC		
LAB FILE ID:	LD29037A	LD29038A	LD29039A		
DATE EXTRACTED:	04/29/1614:40	04/29/1614:40	04/29/1614:40	DATE COLLECTED:	NA
DATE ANALYZED:	04/29/1620:18	04/29/1620:35	04/29/1620:52	DATE RECEIVED:	04/29/16
PREP. BATCH:	DSD037S	DSD037S	DSD037S		
CALIB. REF:	LD29035A	LD29035A	LD29035A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
DRO	ND	500	465	93	500	444	89	5	60-150	30

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromobenzene	100	88.3	88	100	89.2	89	60-130
Hexacosane	25.0	24.4	98	25.0	24.9	99	60-130

Method: 8015C

QC Measure: DSD037SX

Associated Samples:

CAFB-IDW-S-042816

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16D201
METHOD: SW3550B/8015C

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	DSD037SB	DSD037SX	DSD037SY		
LAB FILE ID:	LD29037A	LD29040A	LD29041A		
DATE EXTRACTED:	04/29/1614:40	04/29/1614:40	04/29/1614:40	DATE COLLECTED:	NA
DATE ANALYZED:	04/29/1620:18	04/29/1621:09	04/29/1621:26	DATE RECEIVED:	04/29/16
PREP. BATCH:	DSD037S	DSD037S	DSD037S		
CALIB. REF:	LD29035A	LD29035A	LD29035A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ORO	ND	500	405	81	500	402	80	1	50-150	30

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromobenzene	100	85.8	86	100	85.9	86	60-130
Hexacosane	25.0	24.8	99	25.0	24.3	97	60-130

RAW DATA

TPH - PURGE AND TRAP

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client	: URS CORPORATION	Date Collected:	04/28/16
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/30/16 10:42
Sample ID	: CAFB-IDW-S-042816	Date Analyzed:	04/30/16 10:42
Lab Samp ID	: D201-01	Dilution Factor:	0.69
Lab File ID	: ED29035A	Matrix :	SOIL
Ext Btch ID	: GPD012S	% Moisture :	20.3
Calib. Ref.	: ED29026A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	0.87	0.22	0.43

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	1.34	1.731	77.3	67-134

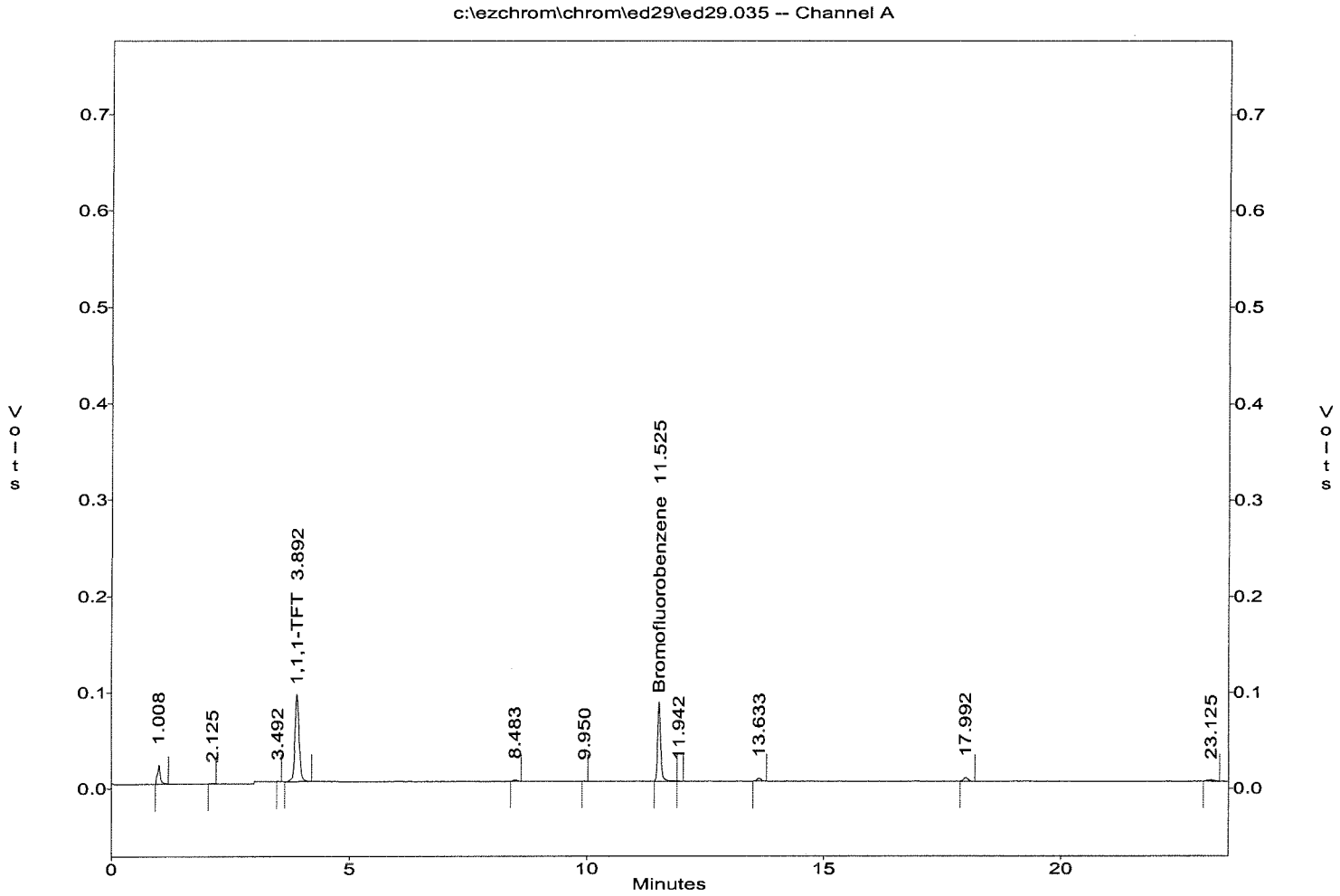
Parameter	H-C Range
GRO	C6-C10

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ed29\ed29.035
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : 16D201-01 100uL S
Acquired : Apr 30, 2016 10:42:35
Printed : May 02, 2016 09:33:45
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.892	556176.0	16520.6	33.67
7	Bromofluorobenzene	11.525	369423.0	11951.9	30.91
G1	GASOLINE(TOTAL)		58823.0	21283.5	2.76
G2	GRO(C6-C10)		33666.0	16318.3	2.06
G3	GRO(2MP-124TMB)		14324.0	16318.3	0.88
G4	GRO(C5-C12)		58823.0	20899.0	2.81
G5	GRO(C6-C12)		58823.0	20889.4	2.82
G6	GRO(C5-C10)		33666.0	16328.0	2.06



QC SUMMARIES

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	04/30/16
Batch No.	: 16D201	Date Extracted:	04/30/16 08:07
Sample ID	: MBLK1S	Date Analyzed:	04/30/16 08:07
Lab Samp ID	: GPD012SB	Dilution Factor:	1
Lab File ID	: ED29031A	Matrix :	SOIL
Ext Btch ID	: GPD012S	% Moisture :	NA
Calib. Ref.	: ED29026A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	1.70	2.000	85.0	67-134

Parameter	H-C Range
GRO	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16D201
METHOD: SW5035A/8015C

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	GPD012SB	GPD012SL	GPD012SC		
LAB FILE ID:	ED29031A	ED29032A	ED29033A		
DATE EXTRACTED:	04/30/1608:07	04/30/1608:45	04/30/1609:24	DATE COLLECTED:	NA
DATE ANALYZED:	04/30/1608:07	04/30/1608:45	04/30/1609:24	DATE RECEIVED:	04/30/16
PREP. BATCH:	GPD012S	GPD012S	GPD012S		
CALIB. REF:	ED29026A	ED29026A	ED29026A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
GRO	ND	25.0	21.9	87	25.0	22.0	88	1	50-150	30

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	2.00	1.86	93	2.00	1.80	90	67-134

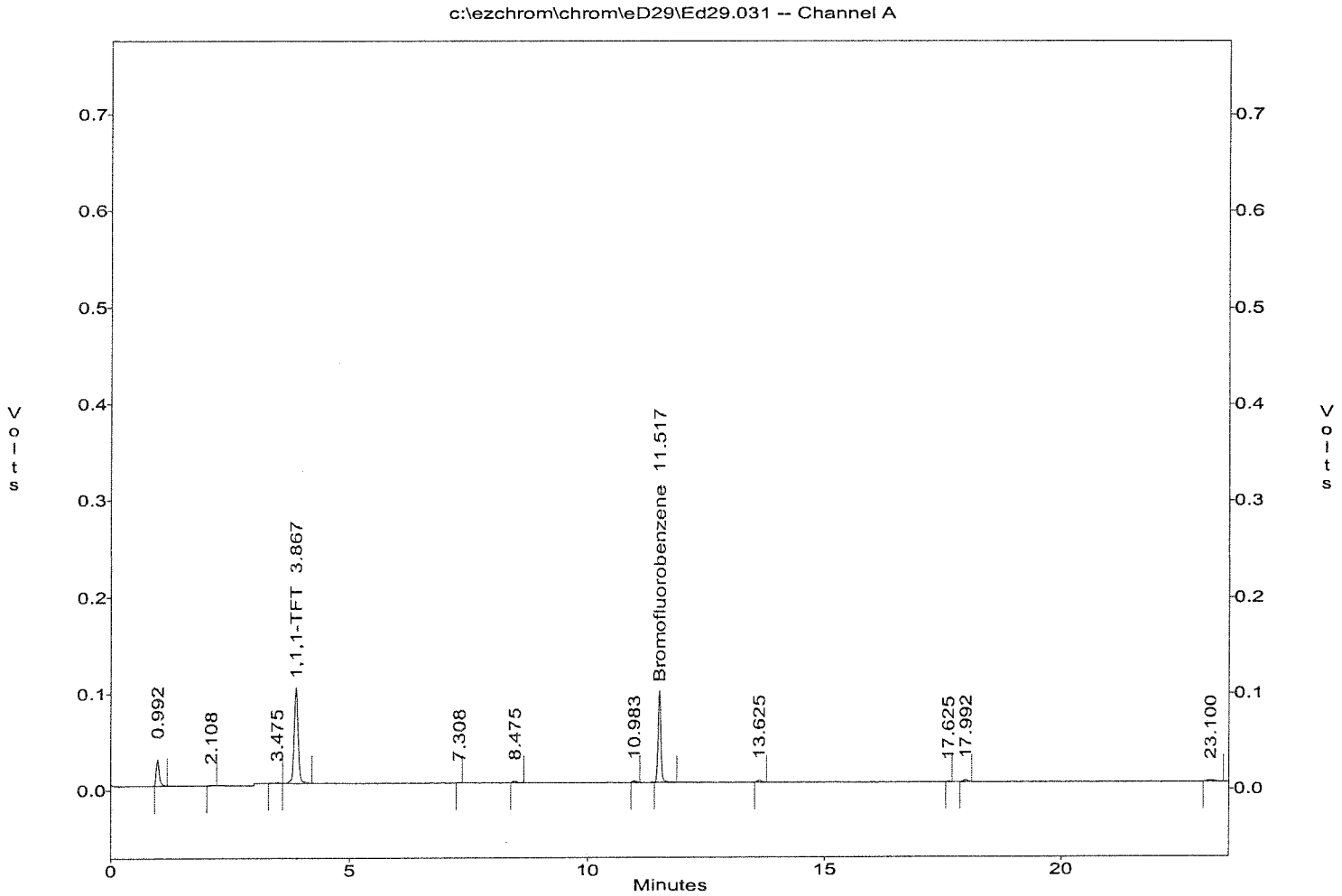
QC DATA

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eD29\Ed29.031
Method : c:\ezchrom\methods\Vg39b18.met
Sample ID : GPD012SB 100uL S
Acquired : Apr 30, 2016 08:07:00
Printed : Apr 30, 2016 08:30:32
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.867	592461.0	16520.6	35.86
8	Bromofluorobenzene	11.517	406595.0	11951.9	34.02
G1	GASOLINE(TOTAL)		58230.0	21283.5	2.74
G2	GRO(C6-C10)		44069.0	16318.3	2.70
G3	GRO(2MP-124TMB)		30741.0	16318.3	1.88
G4	GRO(C5-C12)		58230.0	20899.0	2.79
G5	GRO(C6-C12)		58230.0	20889.4	2.79
G6	GRO(C5-C10)		44069.0	16328.0	2.70

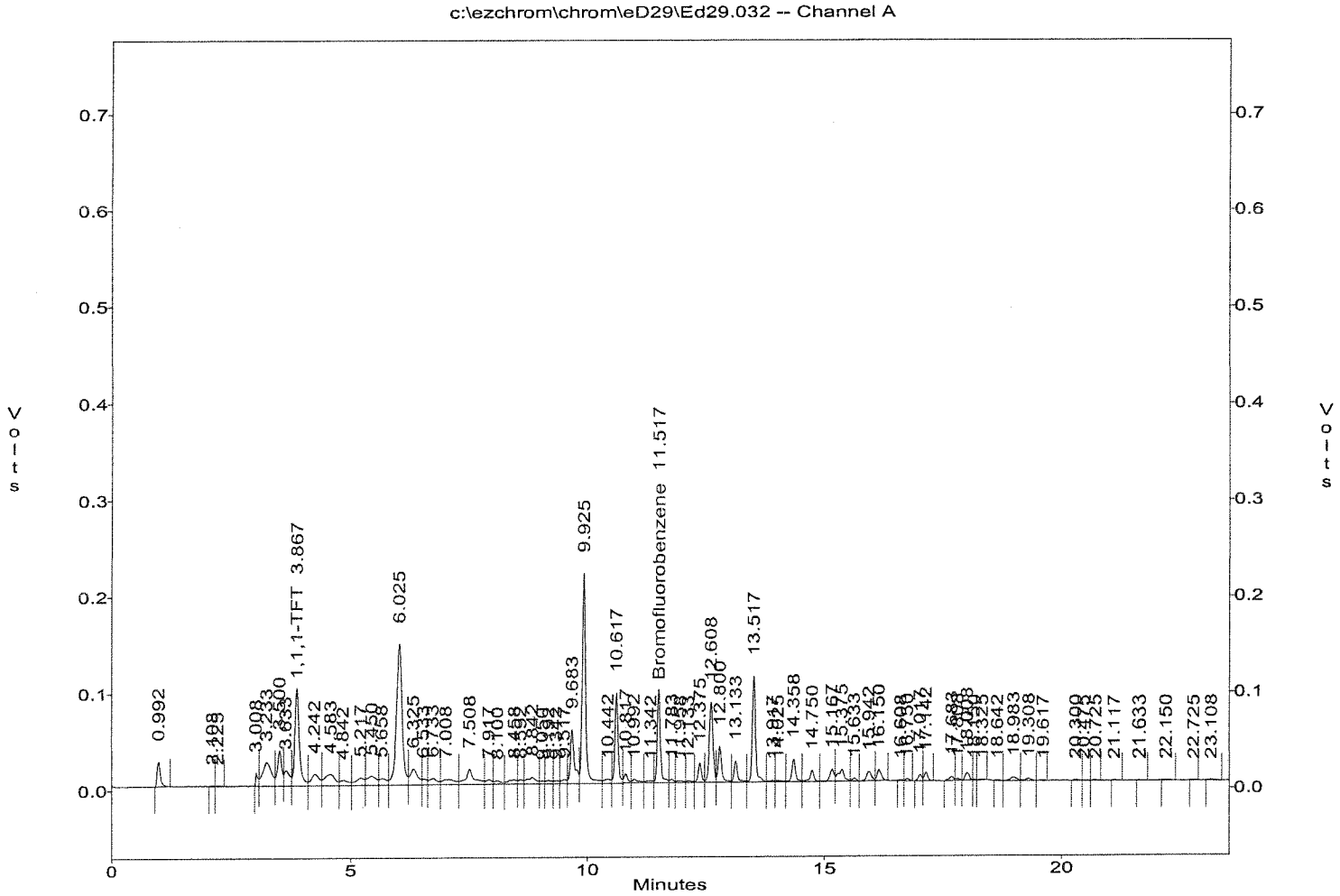


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eD29\Ed29.032
Method : c:\ezchrom\methods\Vg39b18.met
Sample ID : GPD012SL 100uL S
Acquired : Apr 30, 2016 08:45:45
Printed : Apr 30, 2016 09:09:17
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	3.867	676749.0	16520.6	40.96
37	Bromofluorobenzene	11.517	445161.0	11951.9	37.25
G1	GASOLINE(TOTAL)		7995774.0	21283.5	375.68
G2	GRO(C6-C10)		7137508.0	16318.3	437.39
G3	GRO(2MP-124TMB)		7137508.0	16318.3	437.39
G4	GRO(C5-C12)		7940696.0	20899.0	379.96
G5	GRO(C6-C12)		7940696.0	20889.4	380.13
G6	GRO(C5-C10)		7137508.0	16328.0	437.13



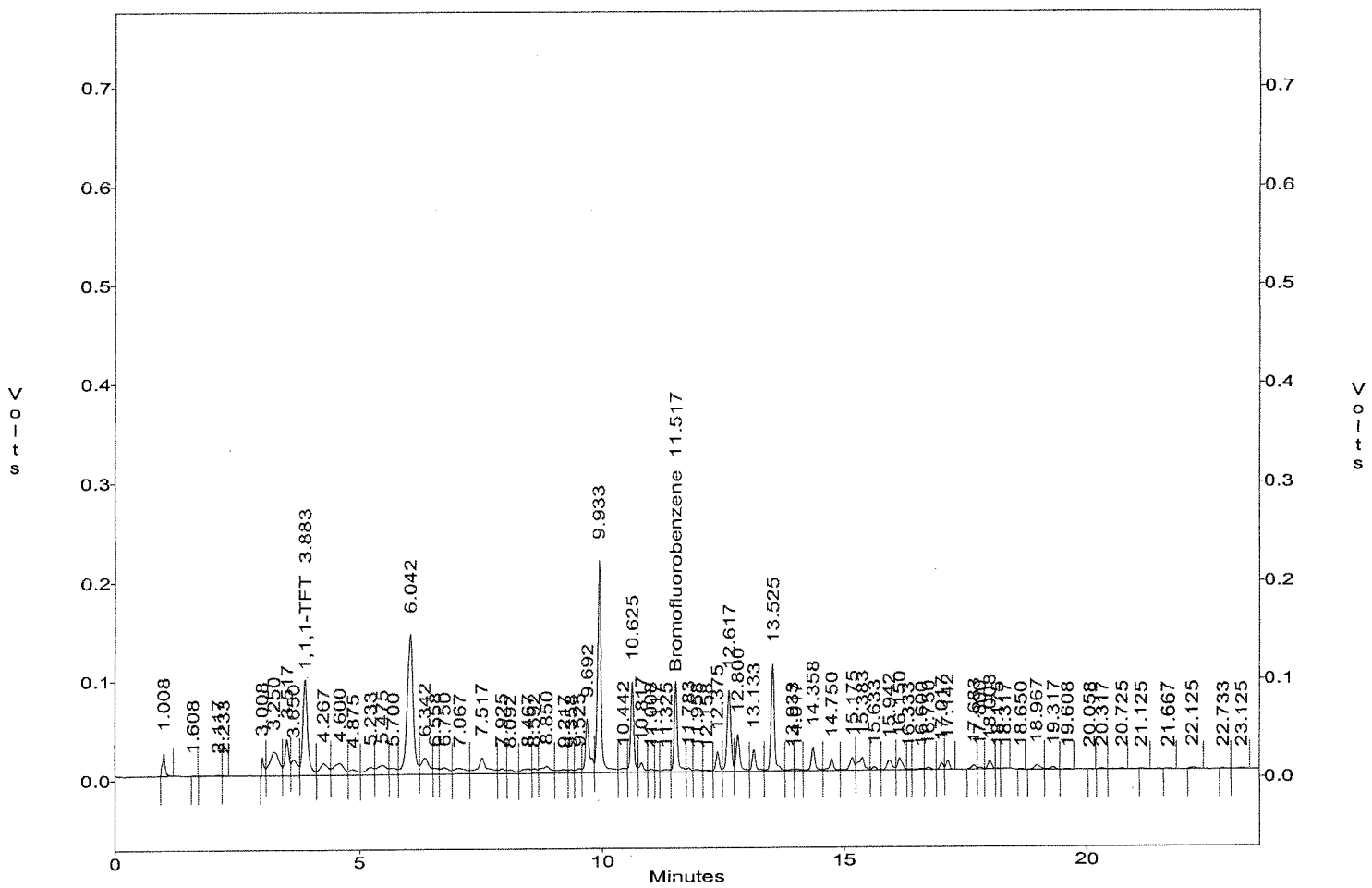
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eD29\Ed29.033
Method : c:\ezchrom\methods\Vg39b18.met
Sample ID : GPD012SC 100uL S
Acquired : Apr 30, 2016 09:24:35
Printed : Apr 30, 2016 09:48:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
9	1,1,1-TFT	3.883	667658.0	16520.6	40.41
38	Bromofluorobenzene	11.517	431460.0	11951.9	36.10
G1	GASOLINE(TOTAL)		8101410.0	21283.5	380.64
G2	GRO(C6-C10)		7175308.0	16318.3	439.71
G3	GRO(2MP-124TMB)		7176686.0	16318.3	439.79
G4	GRO(C5-C12)		8036614.0	20899.0	384.54
G5	GRO(C6-C12)		8035236.0	20889.4	384.66
G6	GRO(C5-C10)		7176686.0	16328.0	439.53

c:\ezchrom\chrom\eD29\Ed29.033 -- Channel A



INITIAL CALIBRATIONS

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EB18002A 02/18/16 13:52
LFID & Datetime: EB18003A 02/18/16 14:31
LFID & Datetime: EB18004A 02/18/16 15:10
LFID & Datetime: EB18005A 02/18/16 15:48
LFID & Datetime: EB18006A 02/18/16 16:27
LFID & Datetime: EB18007A 02/18/16 17:05
LFID & Datetime: EB18008A 02/18/16 17:44
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.50X	5.00X	25.00X	50.00X	75.00X	100.00X	MEAN	%RSD	
Gasoline(TOTAL)	20.00	19079	20722	21739	22582	21738	21312	21813	21283.5	5.3	✓
GRO(C6-C10)	20.00	15251	15915	17383	17177	16387	15986	16130	16318.3	4.6	✓
GRO(2MP-124TMB)	20.00	15251	15915	17383	17177	16387	15986	16130	16318.3	4.6	✓
GRO(C5-C12)	20.00	19079	20335	21499	22168	21270	20778	21166	20899.0	4.7	✓
GRO(C6-C12)	20.00	19015	20335	21499	22168	21266	20778	21165	20889.4	4.8	✓
GRO(C5-C10)	20.00	15314	15915	17383	17177	16390	15986	16131	16328.0	4.5	✓
SURROGATE	X	1.00X	2.00X	3.00X	4.00X	5.00X	8.00X	10.00X	MEAN	%RSD	
Bromofluorobenzene	10.00	9753	10148	10476	12706	12842	13560	14179	11951.9	15.0	
1,1,1-Trifluorotoluene	10.00	16369	16727	17564	17110	14665	16478	16730	16520.6	5.5	

VG39B18.MET

AA
02/23/16

FORM VI 8015P -2 1/96

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EB18002A 02/18/16 13:52
LFID & Datetime: EB18003A 02/18/16 14:31
LFID & Datetime: EB18004A 02/18/16 15:10
LFID & Datetime: EB18005A 02/18/16 15:48
LFID & Datetime: EB18006A 02/18/16 16:27
LFID & Datetime: EB18007A 02/18/16 17:05
LFID & Datetime: EB18008A 02/18/16 17:44

COMPOUND	RT OF STANDARDS (MIN) 1.0X	2.5X	5.0X	25.0X	50.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Gasoline(TOTAL)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO(C6-C10)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO(2MP-124TMB)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO(C5-C12)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO(C6-C12)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO(C5-C10)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SURROGATE	1.0X	2.0X	3.0X	4.0X	5.0X	8.0X	10.0X	RT	FROM	TO	WIDTH
Bromofluorobenzene	11.467	11.475	11.475	11.475	11.475	11.467	11.467	11.472	11.429	11.515	0.043
1,1,1-Trifluorotoluene	3.792	3.800	3.800	3.792	3.792	3.800	3.800	3.797	3.673	3.921	0.124

VG39B18.MET

QA
02/23/16

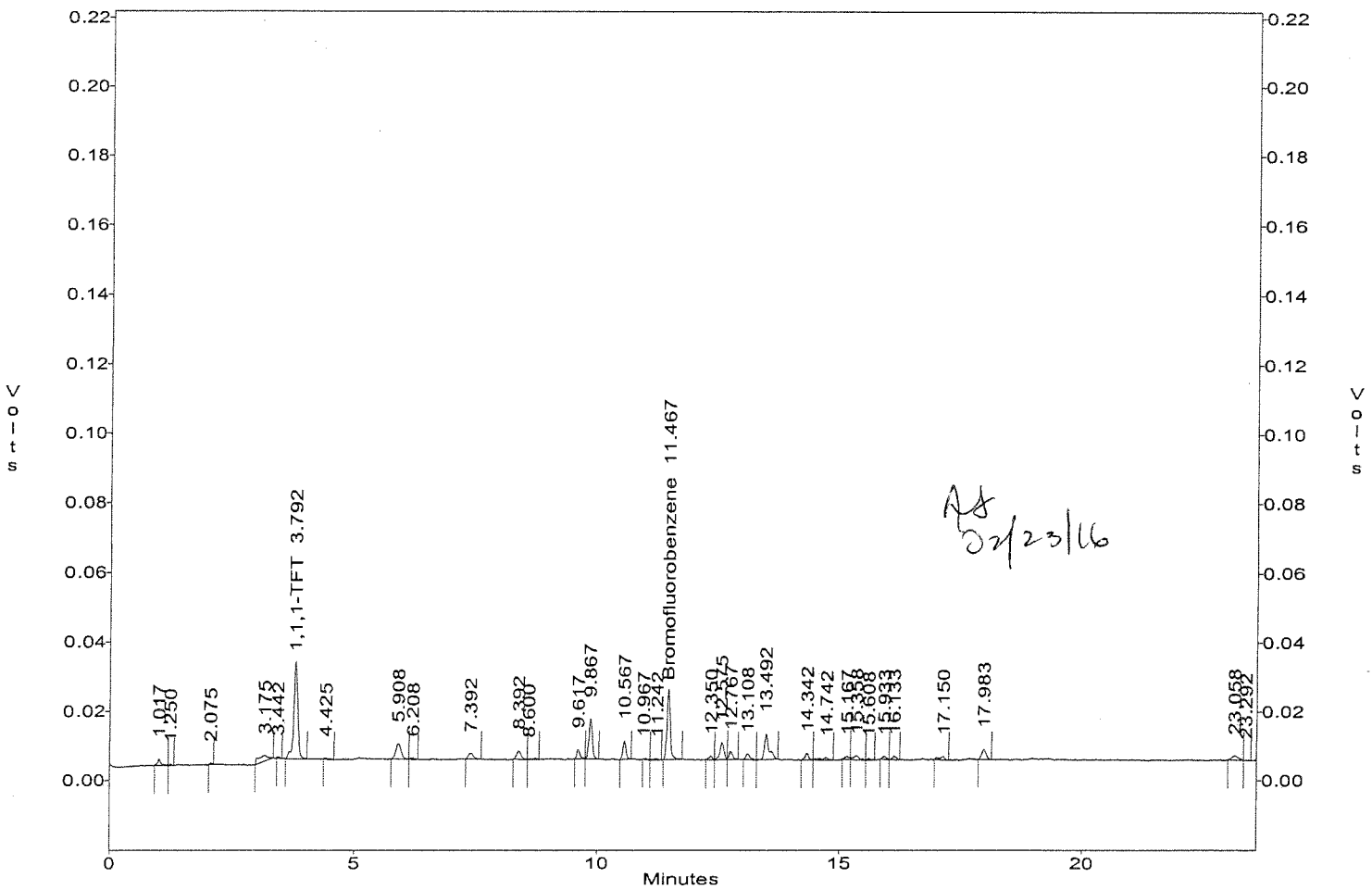
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.002
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1801 20/10
Acquired : Feb 18, 2016 13:52:42
Printed : Feb 19, 2016 08:55:33
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	3.792	163691.0	16520.6	10.00
18	Bromofluorobenzene	11.467	97530.0	11951.9	10.00
G1	GASOLINE(TOTAL)		381573.0	21283.5	20.00
G2	GRO(C6-C10)		305016.0	16318.3	20.00
G3	GRO(2MP-124TMB)		305016.0	16318.3	20.00
G4	GRO(C5-C12)		381573.0	20899.0	20.00
G5	GRO(C6-C12)		380304.0	20889.4	20.00
G6	GRO(C5-C10)		306285.0	16328.0	20.00

c:\ezchrom\chrom\eb18\eb18.002 -- Channel A

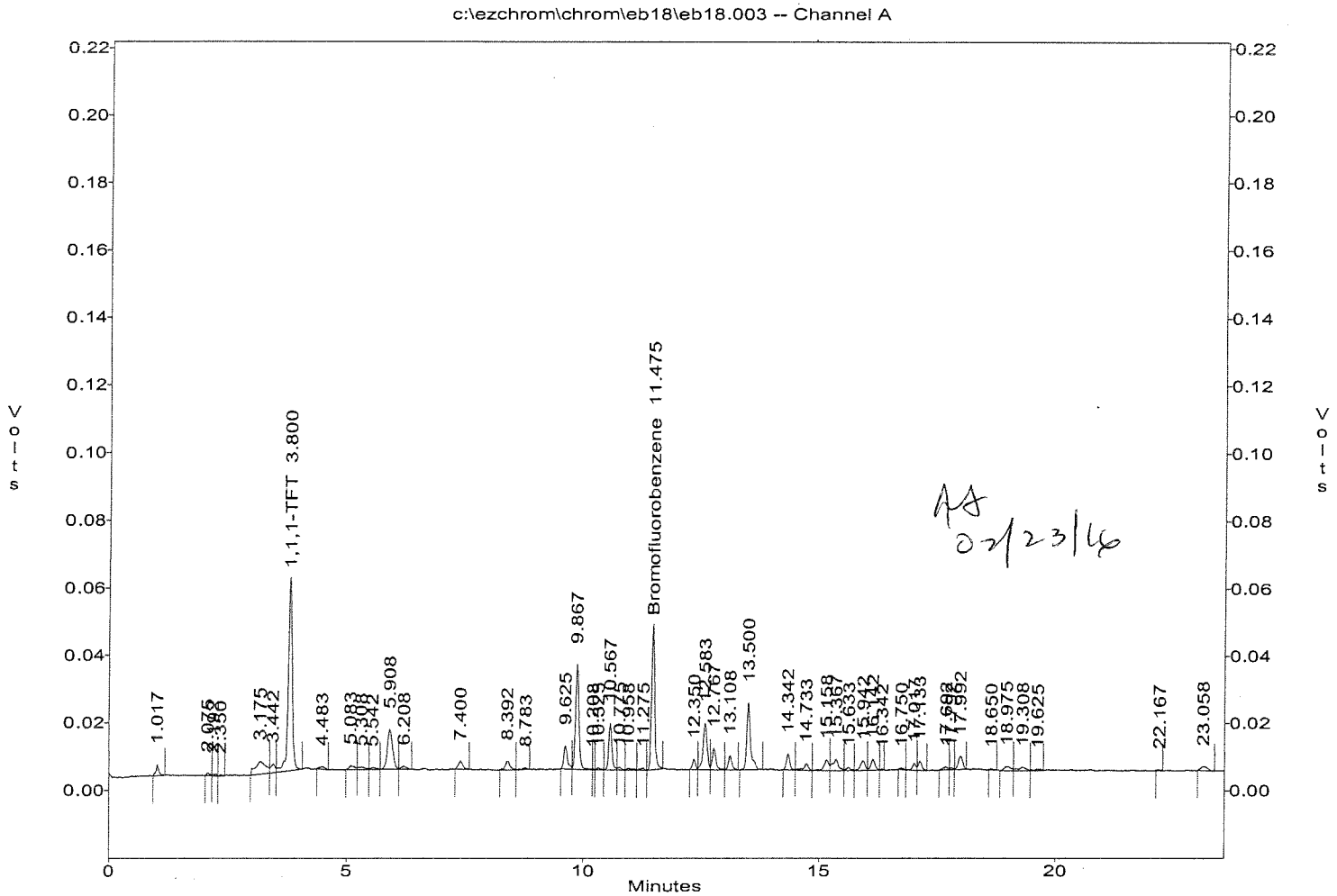


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.003
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1802 50/20
Acquired : Feb 18, 2016 14:31:25
Printed : Feb 19, 2016 08:55:43
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	3.800	334546.0	16520.6	20.00
25	Bromofluorobenzene	11.475	202957.0	11951.9	20.00
G1	GASOLINE(TOTAL)		1036084.0	21283.5	50.00
G2	GRO(C6-C10)		795739.0	16318.3	50.00
G3	GRO(2MP-124TMB)		795739.0	16318.3	50.00
G4	GRO(C5-C12)		1016732.0	20899.0	50.00
G5	GRO(C6-C12)		1016732.0	20889.4	50.00
G6	GRO(C5-C10)		795739.0	16328.0	50.00

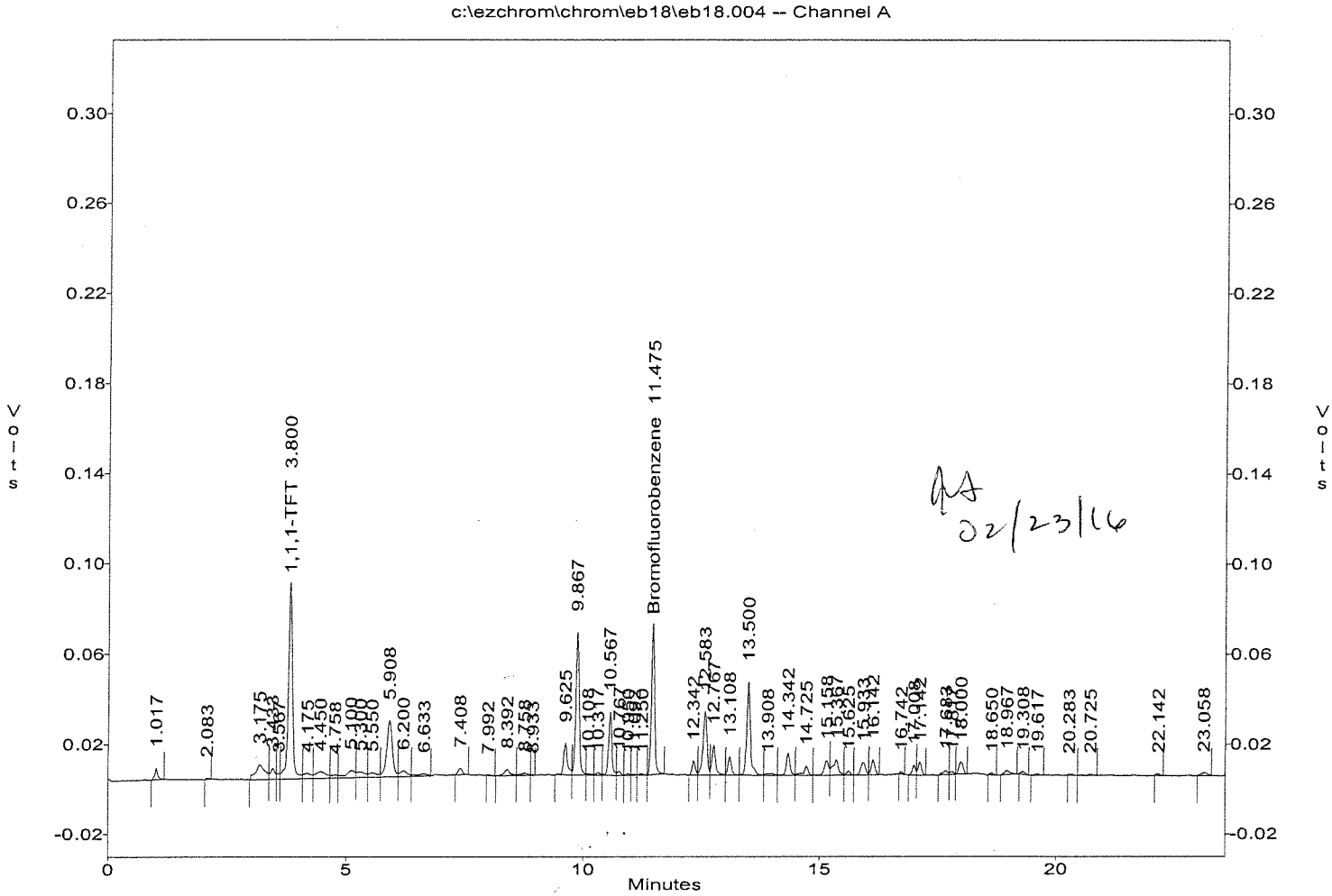


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.004
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1803 100/30
Acquired : Feb 18, 2016 15:10:04
Printed : Feb 19, 2016 08:56:24
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	3.800	526924.0	16520.6	30.00
30	Bromofluorobenzene	11.475	314292.0	11951.9	30.00
G1	GASOLINE(TOTAL)		2173880.0	21283.5	100.00
G2	GRO(C6-C10)		1738275.0	16318.3	100.00
G3	GRO(2MP-124TMB)		1738275.0	16318.3	100.00
G4	GRO(C5-C12)		2149930.0	20899.0	100.00
G5	GRO(C6-C12)		2149930.0	20889.4	100.00
G6	GRO(C5-C10)		1738275.0	16328.0	100.00



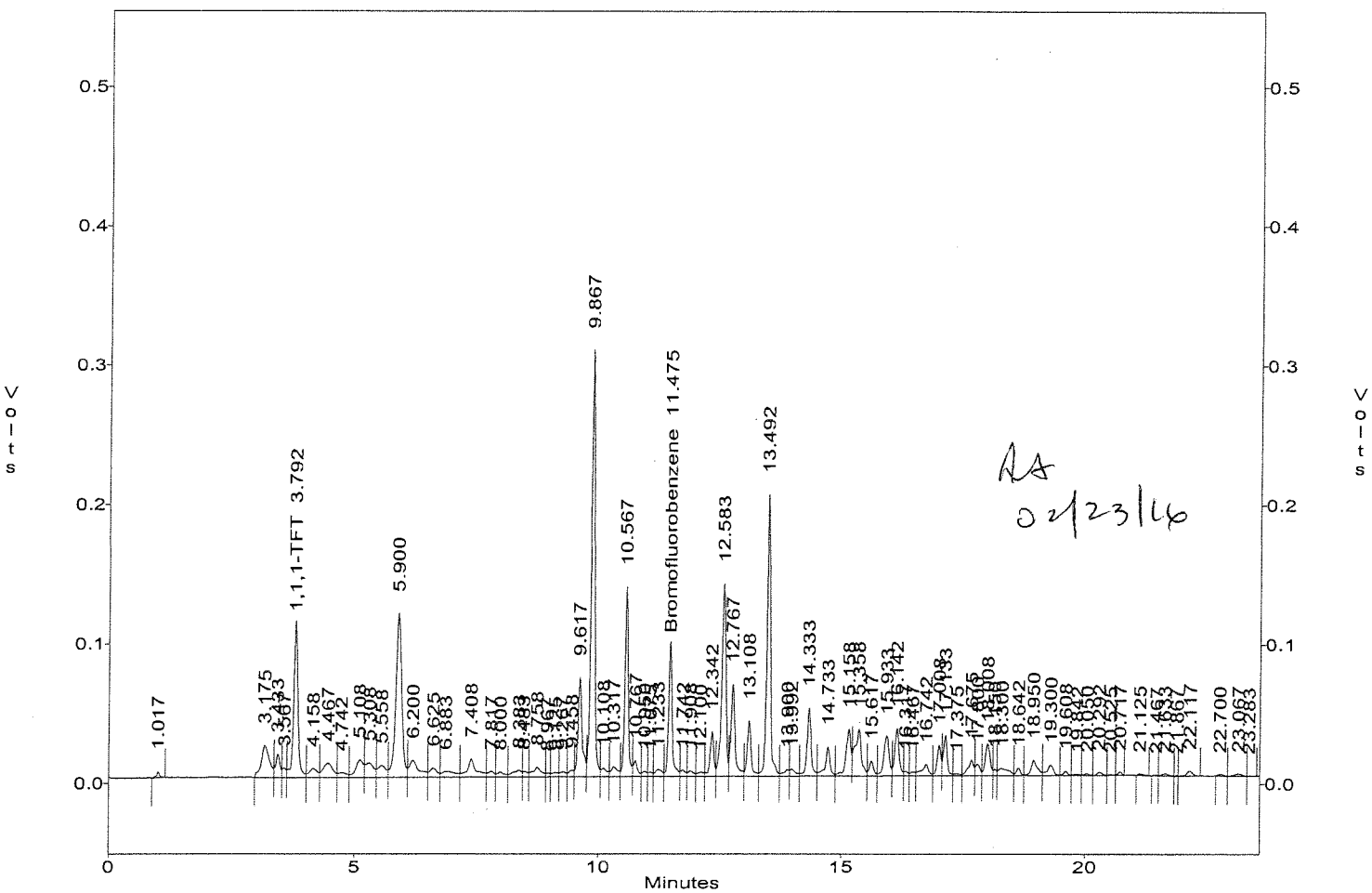
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.005
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1804 500/40
Acquired : Feb 18, 2016 15:48:36
Printed : Feb 19, 2016 08:57:08
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
5	1,1,1-TFT	3.792	684413.0	16520.6	40.00
35	Bromofluorobenzene	11.475	508229.0	11951.9	40.00
G1	GASOLINE(TOTAL)		11291085.0	21283.5	500.00
G2	GRO(C6-C10)		8588334.0	16318.3	500.00
G3	GRO(2MP-124TMB)		8588334.0	16318.3	500.00
G4	GRO(C5-C12)		11083756.0	20899.0	500.00
G5	GRO(C6-C12)		11083756.0	20889.4	500.00
G6	GRO(C5-C10)		8588334.0	16328.0	500.00

c:\ezchrom\chrom\eb18\eb18.005 -- Channel A



47

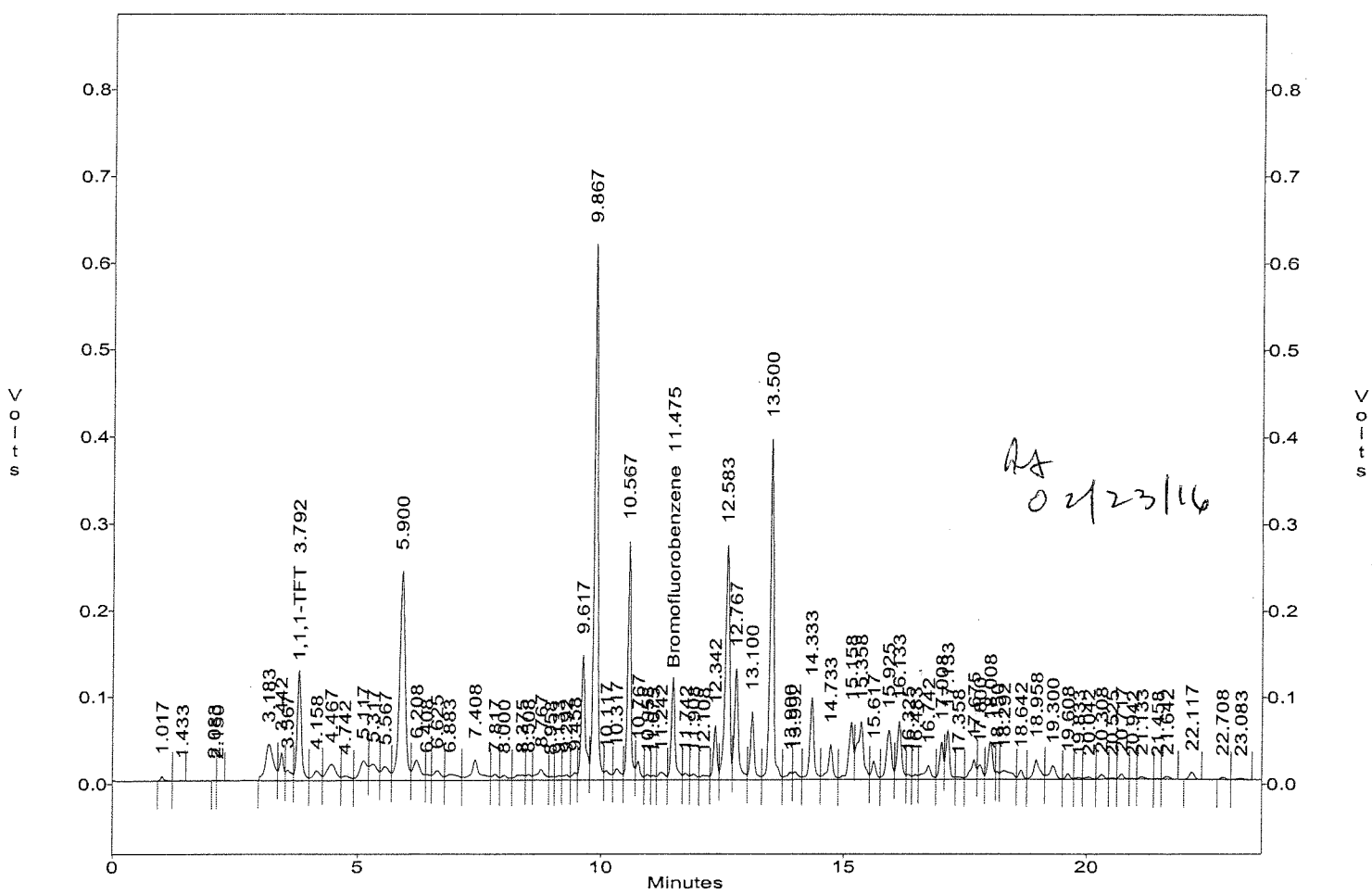
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.006
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1805 1000/50
Acquired : Feb 18, 2016 16:27:15
Printed : Feb 19, 2016 08:58:22
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	3.792	733253.0	16520.6	50.00
39	Bromofluorobenzene	11.475	642099.0	11951.9	50.00
G1	GASOLINE(TOTAL)		21738434.0	21283.5	1000.00
G2	GRO(C6-C10)		16386909.0	16318.3	1000.00
G3	GRO(2MP-124TMB)		16386909.0	16318.3	1000.00
G4	GRO(C5-C12)		21269656.0	20899.0	1000.00
G5	GRO(C6-C12)		21266464.0	20889.4	1000.00
G6	GRO(C5-C10)		16390099.0	16328.0	1000.00

c:\ezchrom\chrom\eb18\eb18.006 -- Channel A



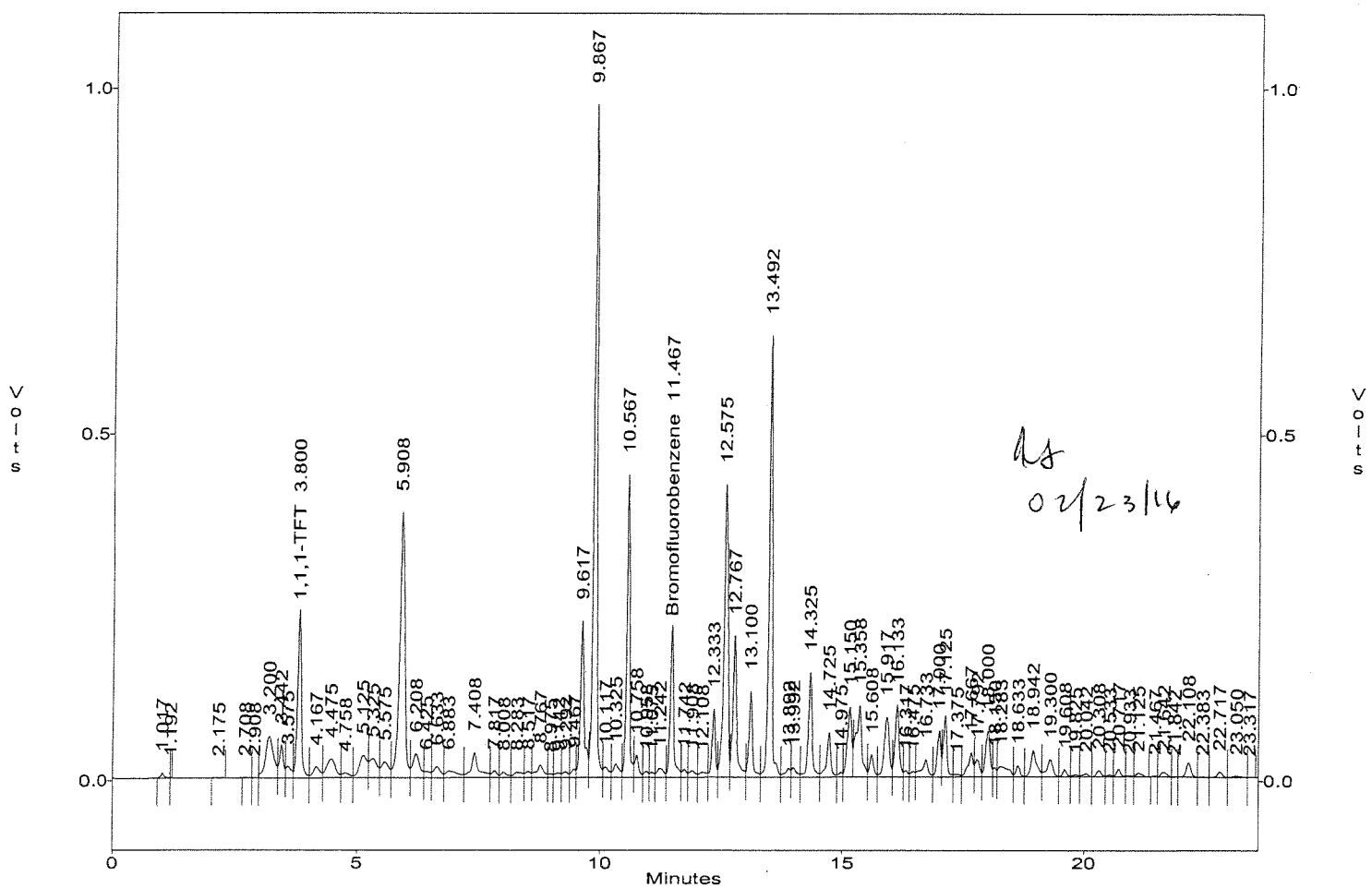
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.007
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1806 1500/80
Acquired : Feb 18, 2016 17:05:55
Printed : Feb 19, 2016 08:58:39
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
9	1,1,1-TFT	3.800	1318233.0	16520.6	80.00
40	Bromofluorobenzene	11.467	1084777.0	11951.9	80.00
G1	GASOLINE(TOTAL)		31967654.0	21283.5	1500.00
G2	GRO(C6-C10)		23979588.0	16318.3	1500.00
G3	GRO(2MP-124TMB)		23979588.0	16318.3	1500.00
G4	GRO(C5-C12)		31166696.0	20899.0	1500.00
G5	GRO(C6-C12)		31166696.0	20889.4	1500.00
G6	GRO(C5-C10)		23979588.0	16328.0	1500.00

c:\ezchrom\chrom\eb18\eb18.007 -- Channel A

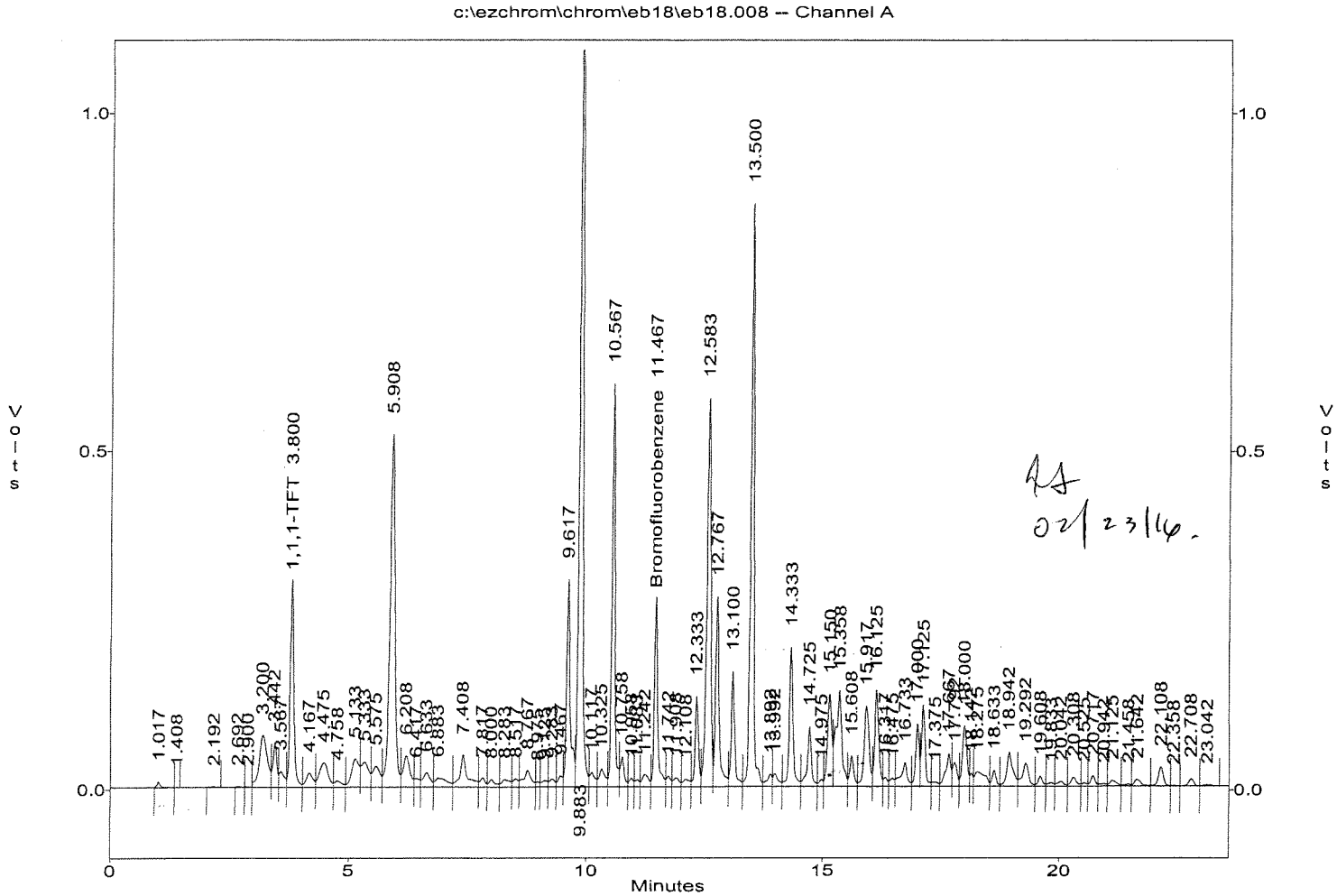


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.008
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : VG39B1807 2000/100
Acquired : Feb 18, 2016 17:44:35
Printed : Feb 19, 2016 08:58:54
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
9	1,1,1-TFT	3.800	1673043.0	16520.6	100.00
40	Bromofluorobenzene	11.467	1417863.0	11951.9	100.00
G1	GASOLINE(TOTAL)		43625468.0	21283.5	2000.00
G2	GRO(C6-C10)		32259870.0	16318.3	2000.00
G3	GRO(2MP-124TMB)		32259870.0	16318.3	2000.00
G4	GRO(C5-C12)		42331424.0	20899.0	2000.00
G5	GRO(C6-C12)		42329704.0	20889.4	2000.00
G6	GRO(C5-C10)		32261586.0	16328.0	2000.00



SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EB18005A 02/18/2016 15:48
Conc Cont LFID & Datetime: EB18010A 02/18/2016 19:01
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	21283.5	9614919	451.76	-10		20
GRO(C6-C10)	NA	NA	NA	500.0	16318.3	8123611	497.82	-0		20
GRO(2MP-124TMB)	NA	NA	NA	500.0	16318.3	8141649	498.93	-0		20
GRO(C5-C12)	NA	NA	NA	500.0	20899.0	9410640	450.29	-10		20
GRO(C6-C12)	NA	NA	NA	500.0	20889.4	9390432	449.53	-10		20
GRO(C5-C10)	NA	NA	NA	500.0	16328.0	8143819	498.77	-0		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
Bromofluorobenzene	11.467	11.424	11.510	40.0	11951.9	479150	40.09	0		20
1,1,1-Trifluorotoluene	3.792	3.668	3.916	40.0	16520.6	715634	43.32	8		20

VG39B18.MET

AA
02/23/16

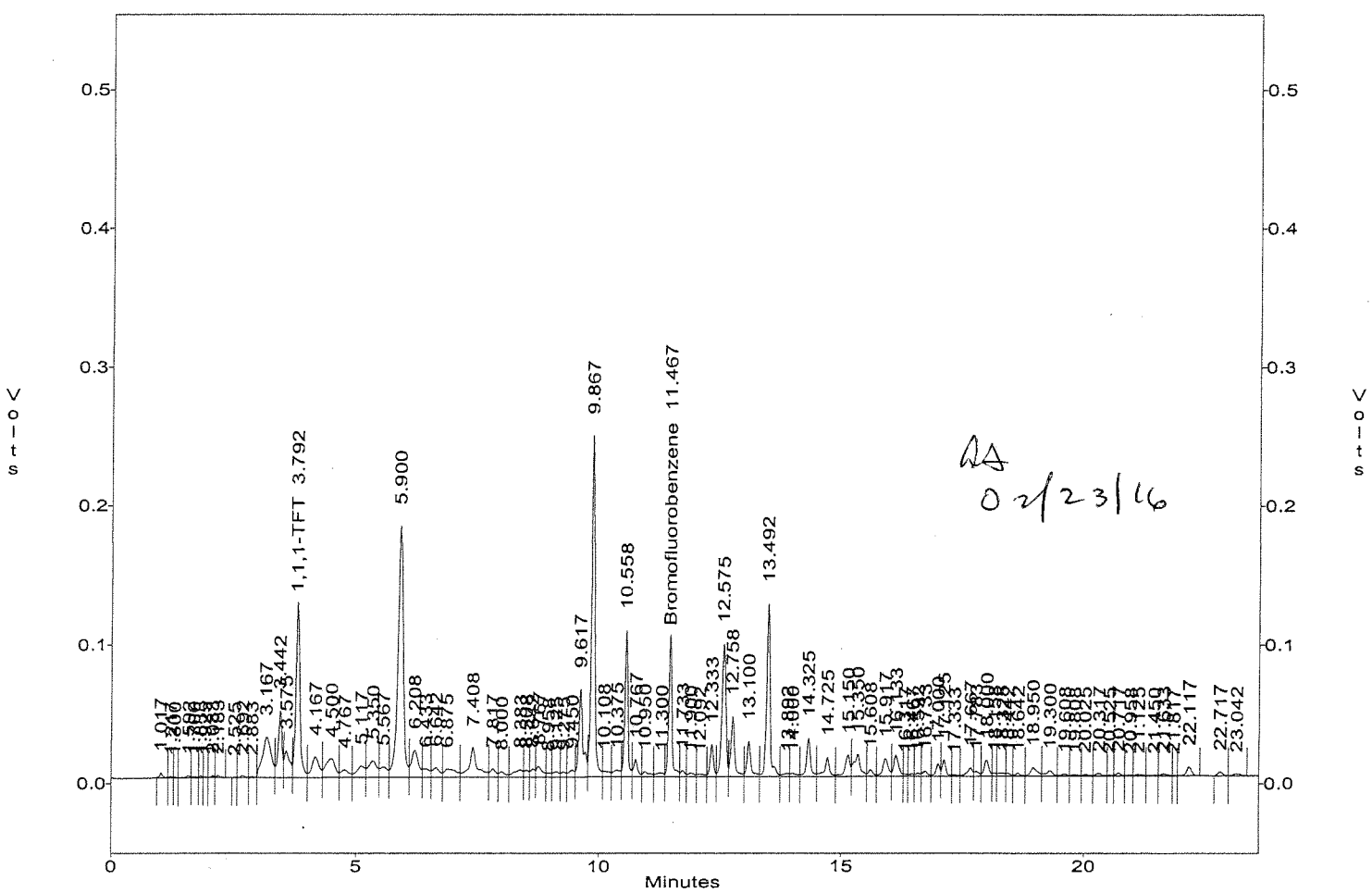
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.010
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : IVG39B1802 500/40
Acquired : Feb 18, 2016 19:01:49
Printed : Feb 19, 2016 09:00:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
16	1,1,1-TFT	3.792	715634.0	16520.6	43.32
47	Bromofluorobenzene	11.467	479150.0	11951.9	40.09
G1	GASOLINE(TOTAL)		9614919.0	21283.5	451.76
G2	GRO(C6-C10)		8123611.0	16318.3	497.82
G3	GRO(2MP-124TMB)		8141649.0	16318.3	498.93
G4	GRO(C5-C12)		9410640.0	20899.0	450.29
G5	GRO(C6-C12)		9390432.0	20889.4	449.53
G6	GRO(C5-C10)		8143819.0	16328.0	498.77

c:\ezchrom\chrom\eb18\eb18.010 -- Channel A

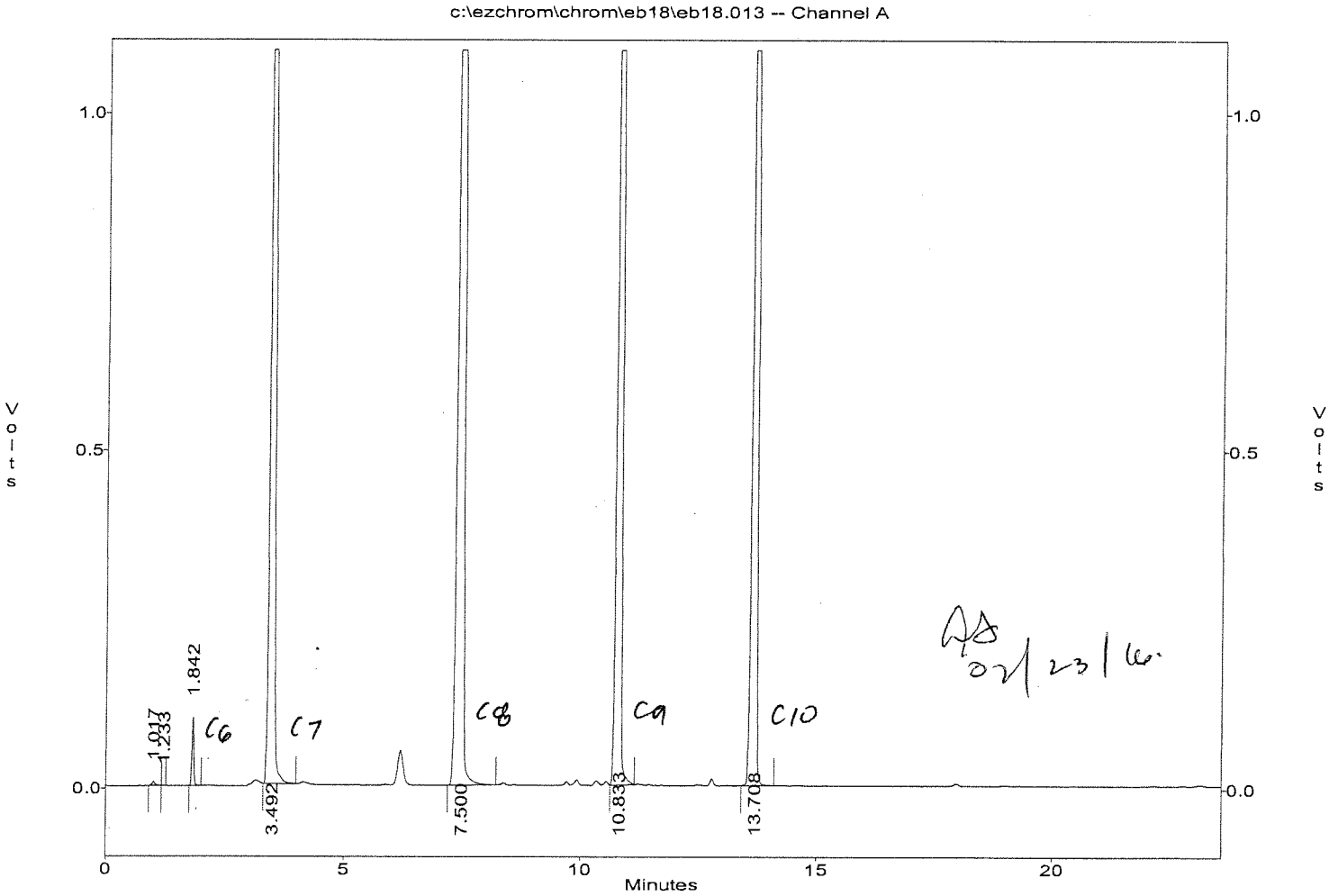


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.013
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : GRO-1
Acquired : Feb 18, 2016 20:57:34
Printed : Feb 19, 2016 09:01:09
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
--	1,1,1-TFT	3.792	0.0	0.0	0.00
--	Bromofluorobenzene	11.475	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		39298152.0	21283.5	1846.42
G2	GRO(C6-C10)		29932010.0	16318.3	1834.26
G3	GRO(2MP-124TMB)		30212824.0	16318.3	1851.47
G4	GRO(C5-C12)		39298152.0	20899.0	1880.38
G5	GRO(C6-C12)		39015688.0	20889.4	1867.73
G6	GRO(C5-C10)		30214476.0	16328.0	1850.47

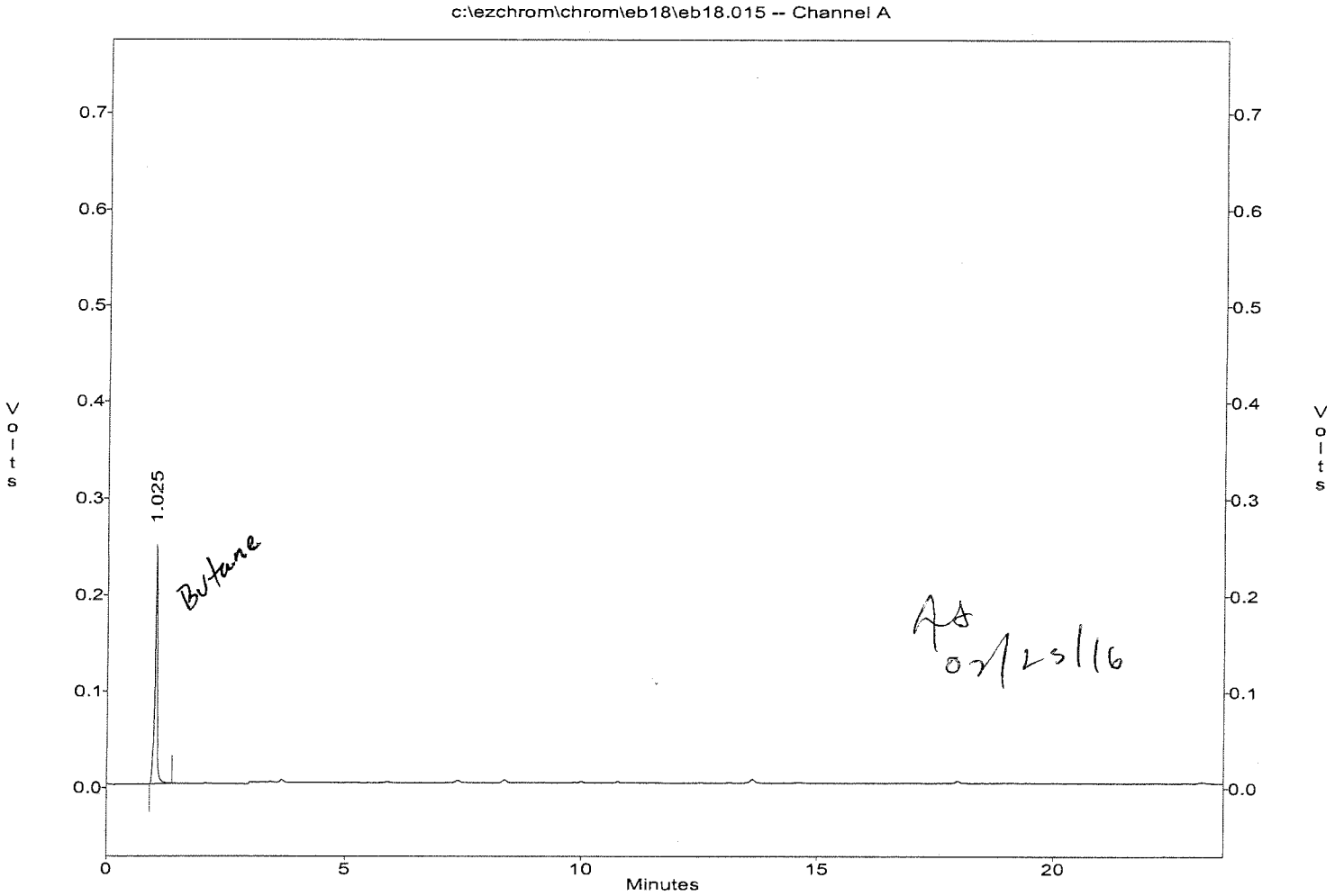


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.015
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : BUTANE
Acquired : Feb 18, 2016 22:14:36
Printed : Feb 19, 2016 09:02:06
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
--	1,1,1-TFT	3.792	0.0	0.0	0.00
--	Bromofluorobenzene	11.475	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		0.0	21283.5	0.00
G2	GRO(C6-C10)		0.0	16318.3	0.00
G3	GRO(2MP-124TMB)		0.0	16318.3	0.00
G4	GRO(C5-C12)		0.0	20899.0	0.00
G5	GRO(C6-C12)		0.0	20889.4	0.00
G6	GRO(C5-C10)		0.0	16328.0	0.00



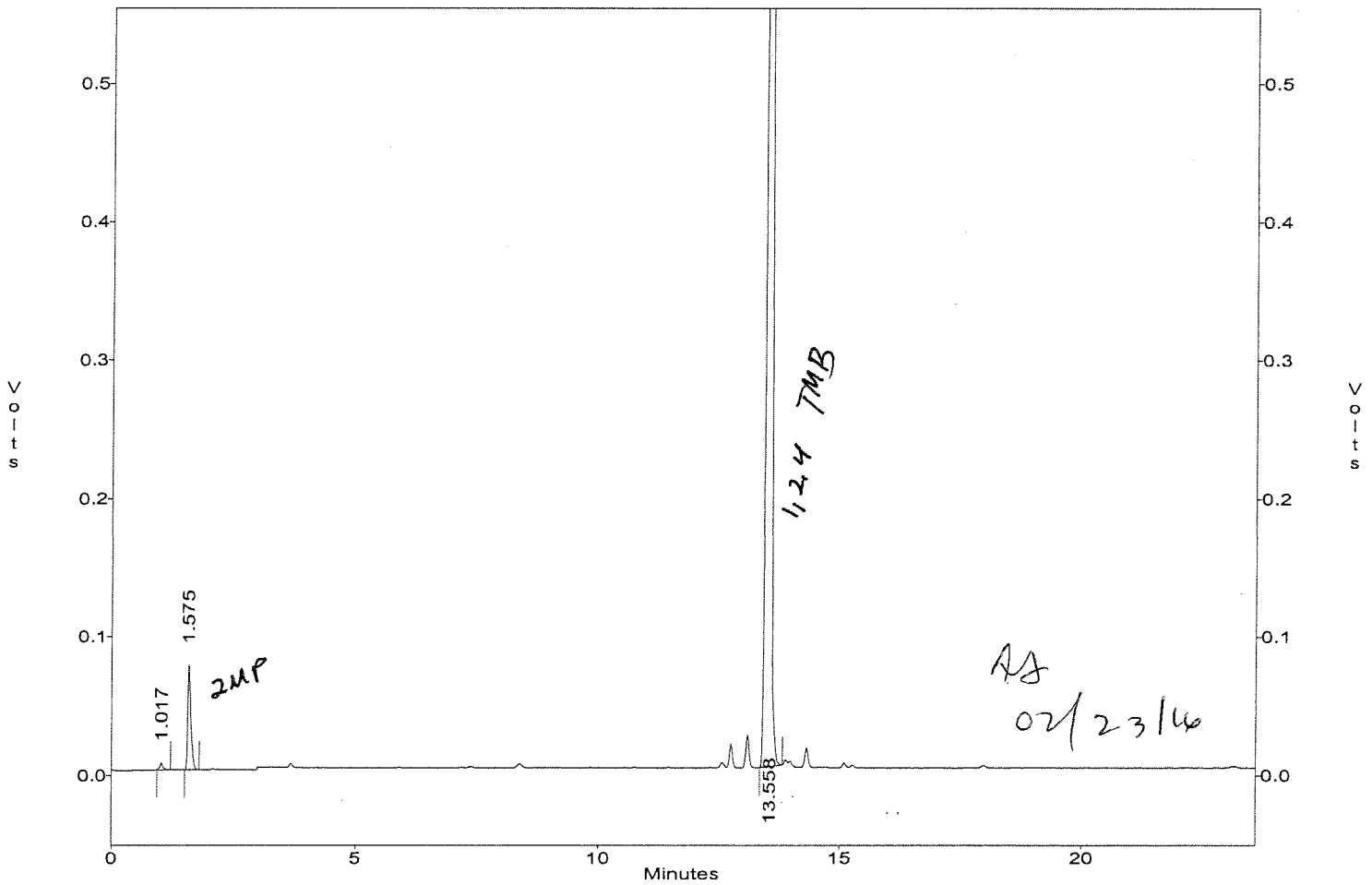
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.016
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : 2MP/1,2,4-TMB
Acquired : Feb 18, 2016 22:53:05
Printed : Feb 19, 2016 09:02:23
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
--	1,1,1-TFT	3.792	0.0	0.0	0.00
--	Bromofluorobenzene	11.475	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		9646152.0	21283.5	453.22
G2	GRO(C6-C10)		9302484.0	16318.3	570.06
G3	GRO(2MP-124TMB)		343668.0	16318.3	21.06
G4	GRO(C5-C12)		9646152.0	20899.0	461.56
G5	GRO(C6-C12)		9302484.0	20889.4	445.32
G6	GRO(C5-C10)		9646152.0	16328.0	590.78

c:\ezchrom\chrom\eb18\eb18.016 -- Channel A

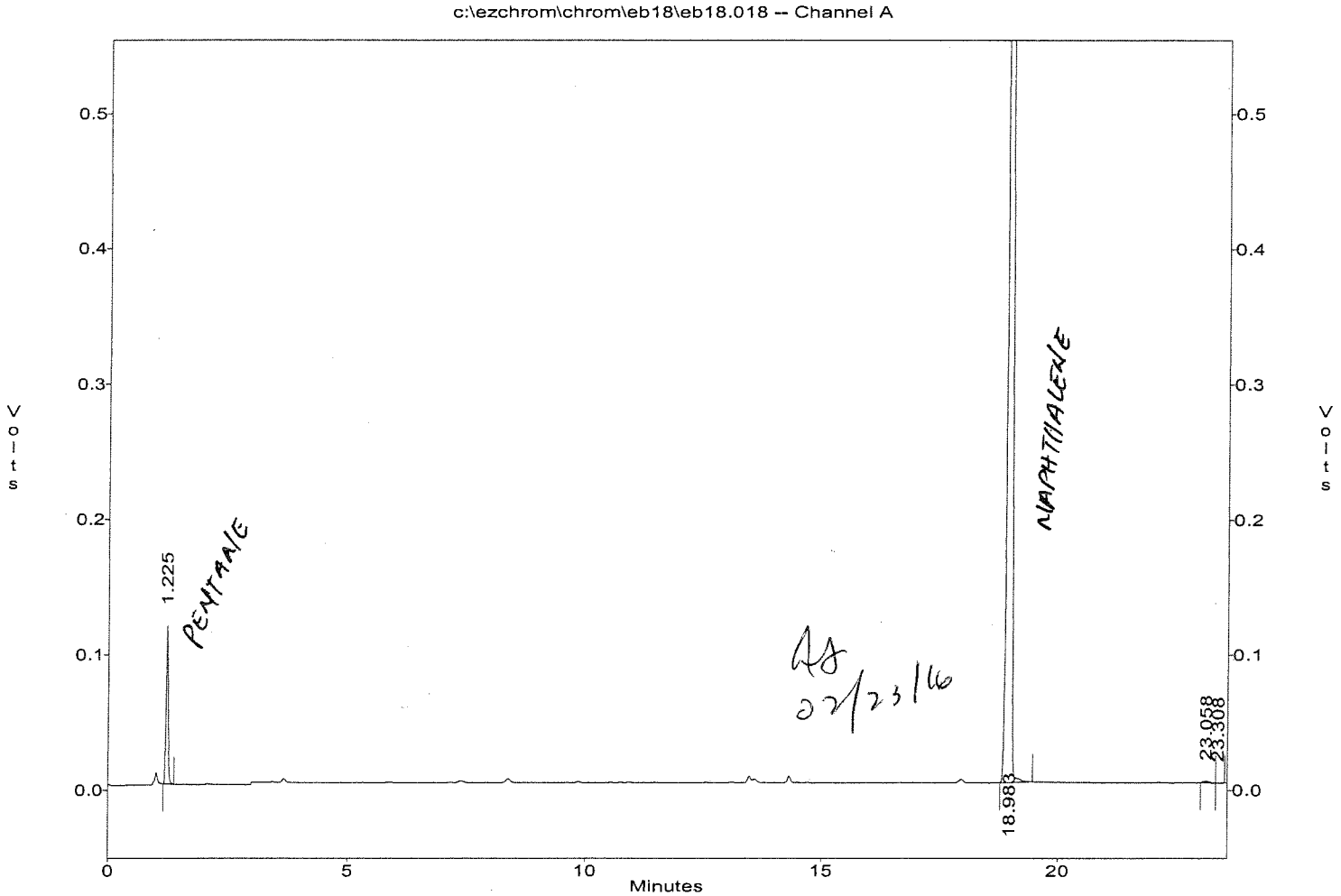


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.018
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : PENTANE/NAPHTHALENE
Acquired : Feb 19, 2016 00:09:52
Printed : Feb 19, 2016 09:03:46
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
--	1,1,1-TFT	3.792	0.0	0.0	0.00
--	Bromofluorobenzene	11.475	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		7795608.0	21283.5	366.28
G2	GRO(C6-C10)		0.0	16318.3	0.00
G3	GRO(2MP-124TMB)		0.0	16318.3	0.00
G4	GRO(C5-C12)		7795608.0	20899.0	373.01
G5	GRO(C6-C12)		7434001.0	20889.4	355.87
G6	GRO(C5-C10)		361607.0	16328.0	22.15



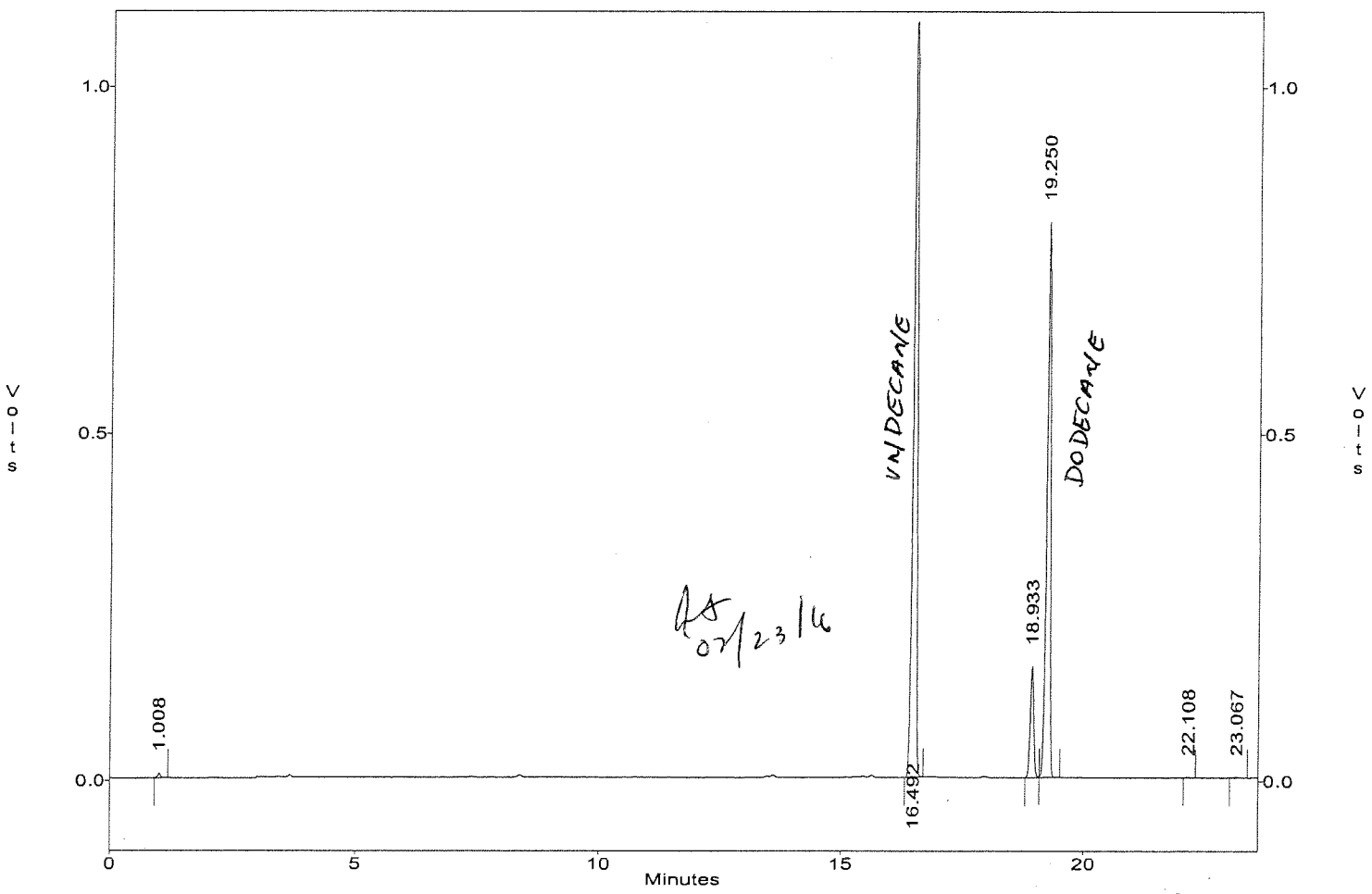
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eb18\eb18.019
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : UNDECANE/DODECANE
Acquired : Feb 19, 2016 00:48:13
Printed : Feb 19, 2016 09:04:06
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
--	1,1,1-TFT	3.792	0.0	0.0	0.00
--	Bromofluorobenzene	11.475	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		11355365.0	21283.5	533.53
G2	GRO(C6-C10)		0.0	16318.3	0.00
G3	GRO(2MP-124TMB)		0.0	16318.3	0.00
G4	GRO(C5-C12)		11349504.0	20899.0	543.06
G5	GRO(C6-C12)		11349504.0	20889.4	543.31
G6	GRO(C5-C10)		0.0	16328.0	0.00

c:\ezchrom\chrom\eb18\eb18.019 -- Channel A



AS 02/23/16

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: EB18005A 02/18/2016 15:48
Conc Cont LFID & Datetime: ED29026A 04/30/2016 04:53
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	500.0	21283.5	10155049	477.13	-5		20
GRO(C6-C10)	NA	NA	NA	500.0	16318.3	7506466	460.00	-8		20
GRO(2MP-124TMB)	NA	NA	NA	500.0	16318.3	7506466	460.00	-8		20
GRO(C5-C12)	NA	NA	NA	500.0	20899.0	9867484	472.15	-6		20
GRO(C6-C12)	NA	NA	NA	500.0	20889.4	9867484	472.37	-6		20
GRO(C5-C10)	NA	NA	NA	500.0	16328.0	7506466	459.73	-8		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
Bromofluorobenzene	11.517	11.474	11.560	40.0	11951.9	480507	40.20	1		20
1,1,1-Trifluorotoluene	3.875	3.751	3.999	40.0	16520.6	699623	42.35	6		20

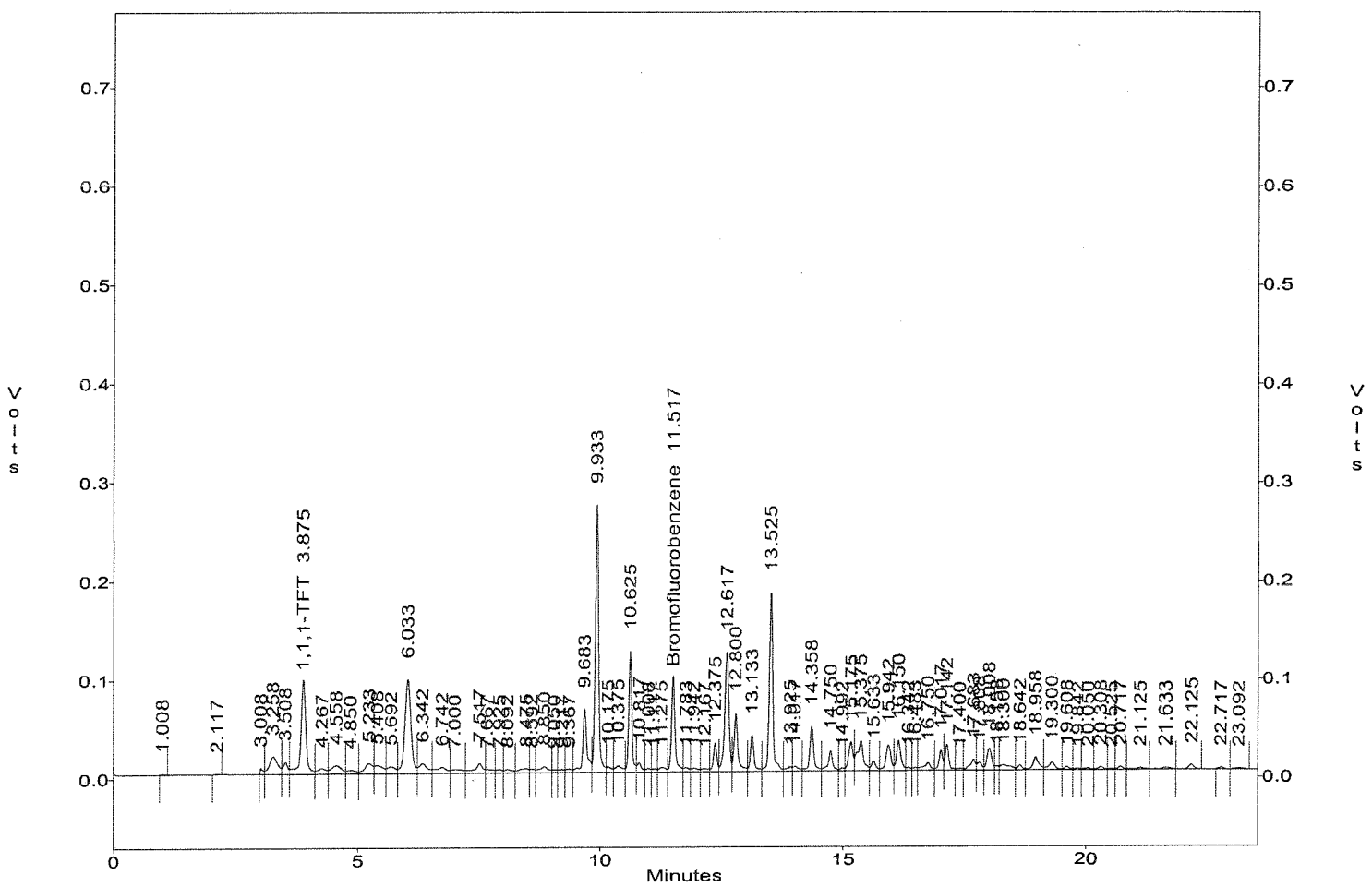
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eD29\Ed29.026
Method : c:\ezchrom\methods\Vg39b18.met
Sample ID : CVG39B18578 500/40
Acquired : Apr 30, 2016 04:53:29
Printed : Apr 30, 2016 05:17:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	3.875	699623.0	16520.6	42.35
36	Bromofluorobenzene	11.517	480507.0	11951.9	40.20
G1	GASOLINE(TOTAL)		10155049.0	21283.5	477.13
G2	GRO(C6-C10)		7506466.0	16318.3	460.00
G3	GRO(2MP-124TMB)		7506466.0	16318.3	460.00
G4	GRO(C5-C12)		9867484.0	20899.0	472.15
G5	GRO(C6-C12)		9867484.0	20889.4	472.37
G6	GRO(C5-C10)		7506466.0	16328.0	459.73

c:\ezchrom\chrom\eD29\Ed29.026 -- Channel A



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EB18005A 02/18/2016 15:48
Conc Cont LFID & Datetime: ED29036A 04/30/2016 11:21
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	21283.5	10107325	474.89	-5		20
GRO(C6-C10)	NA	NA	NA	500.0	16318.3	7458581	457.07	-9		20
GRO(2MP-124TMB)	NA	NA	NA	500.0	16318.3	7458581	457.07	-9		20
GRO(C5-C12)	NA	NA	NA	500.0	20899.0	9781634	468.04	-6		20
GRO(C6-C12)	NA	NA	NA	500.0	20889.4	9781634	468.26	-6		20
GRO(C5-C10)	NA	NA	NA	500.0	16328.0	7458581	456.80	-9		20

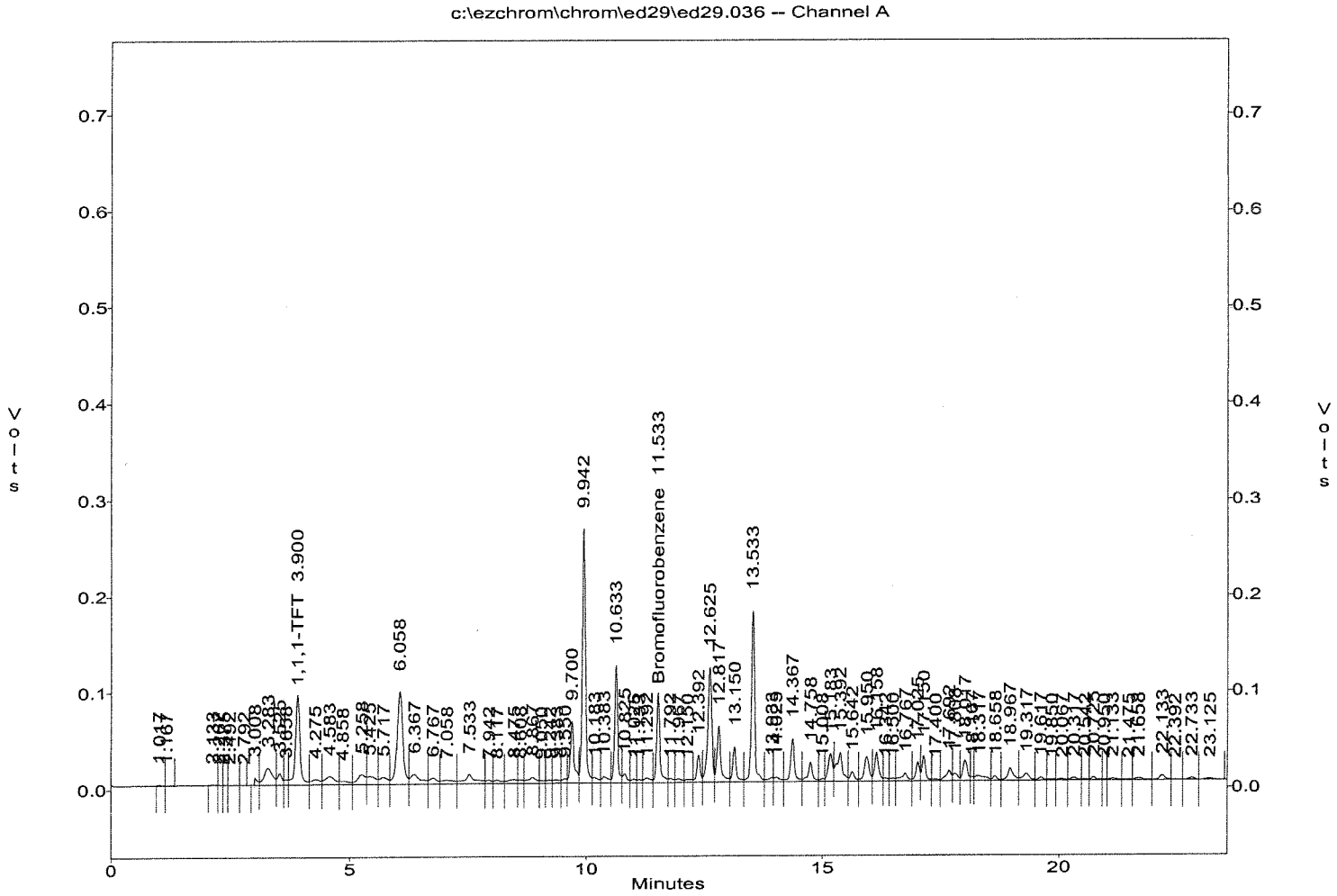
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
Bromofluorobenzene	11.533	11.490	11.576	40.0	11951.9	464886	38.90	-3		20
1,1,1-Trifluorotoluene	3.900	3.776	4.024	40.0	16520.6	643557	38.96	-3		20

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ed29\ed29.036
Method : c:\ezchrom\methods\vg39b18.met
Sample ID : CVG39B18579 500/40
Acquired : Apr 30, 2016 11:21:39
Printed : May 02, 2016 09:34:46
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
12	1,1,1-TFT	3.900	643557.0	16520.6	38.95
42	Bromofluorobenzene	11.533	464886.0	11951.9	38.90
G1	GASOLINE(TOTAL)		10107325.0	21283.5	474.89
G2	GRO(C6-C10)		7458581.0	16318.3	457.07
G3	GRO(2MP-124TMB)		7458581.0	16318.3	457.07
G4	GRO(C5-C12)		9781634.0	20899.0	468.04
G5	GRO(C6-C12)		9781634.0	20889.4	468.26
G6	GRO(C5-C10)		7458581.0	16328.0	456.80



ANALYTICAL LOG(S)

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

50% WEATHERED
GASOLINE ICAL

GRO (SV2-07-03-07)
2MP (SV2-10-25-03)
1,2,4 - TMB (SV2-07-02-16)
BUTANE (SV2-07-01-16)
PENTANE (SV2-07-01-17)
NAPHTHALENE (SV2-07-02-10)
UNDECANE (SV2-07-02-14)
DODECANE (SV2-07-02-15)

Book #:	A39-053
Instrument No.:	39
Analytical Sequence:	EB18
Method File:	☑ V639B18
	☐
	☐
Analytical Batch:	N/A

SOP #	Rev. #
☑ EMAX-5030B	3
☑ EMAX-8015G	5
☐ EMAX-AK101	2
☐ EMAX-	

STANDARDS ID	Amt Added (µL)	Conc. (mg/L)
ICAL SURROGATE SV2-10-23-02	See Analysis Run log	100
ICAL SV2-07-03-08 (REGTEK)	↓	5000
ICV SV2-07-03-09 (CPI)	↓	5000
ICV2 SV2-07-02-28 (Accustandard)	↓	5000
DCC GAS ~~SV2-~~		
DCC		
DCC	SC	2/19/16
BFB/TFT (Sample)		
BFB/TFT (DCC)		
LCS/LCSD		
MS/MSD		
GRO (HC Chain) SV2-07-03-07	3ul	2000

SYRINGES
☑ 5 mL - MSF-01-01-12
☐ 1 mL - MSF-01-01-20
☐ 500 µL - MSF-01-01-21
☐ 250 µL - MSF-01-01-22
☐ 100 µL - MSF-01-01-19
☐ 100 µL - MSF-01-02-16
☐ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-01-18
☑ 10 µL - MSF-01-01-23
☐

Solvent	ID/Lot #
Methanol	
Reagent Water	RW2-12-001
	Lot #
pH strip	N/A

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZC-3-BTEX	

Analyzed By: SC

Date: 2/18/16

Method: Vg39b18.met Batch: Eb18.seq Data: Eb19.005 - [Batch: eb18.seq]

File Edit Method Batch Options Analysis Window Help

Method Data Batch Integ Peaks Batch Custom Review Reproc Recalib Analyze Reports

Run	Run Type	Sample ID	Method	Filename	Description
1	Unknown	IB39B1801	vg39b18.met	EB18.001	
2	Unknown	VG39B1801 20/10 0.02ul GAS ICAL STD / 0.5ul surrogate	vg39b18.met	EB18.002	
3	Unknown	VG39B1802 50/20 0.05 / 1ul	vg39b18.met	EB18.003	50% weathered
4	Unknown	VG39B1803 100/30 0.1 / 1.5ul	vg39b18.met	EB18.004	GASOLINE STANDARD
5	Unknown	VG39B1804 500/40 0.5 / 2ul	vg39b18.met	EB18.005	
6	Unknown	VG39B1805 1000/50 1ul / 2.5ul	vg39b18.met	EB18.006	GASOLINE ICAL
7	Unknown	VG39B1806 1500/80 1.5ul / 4ul	vg39b18.met	EB18.007	
8	Unknown	VG39B1807 2000/100 2ul / 5ul	vg39b18.met	EB18.008	
9	Unknown	IVG39B1801 1000/50 1ul GAS ICV STD / 2.5ul surrogate	vg39b18.met	EB18.009	GASOLINE ICV (CP7)
10	Unknown	IVG39B1802 500/40 0.5ul " / 2ul surrogate	vg39b18.met	EB18.010	
11	Unknown	TEST	vg39b18.met	EB18.011	
12	Unknown	TEST	vg39b18.met	EB18.012	
13	Unknown	GRO-1	vg39b18.met	EB18.013	FINAL
14	Unknown	RINSE	vg39b18.met	EB18.014	
15	Unknown	BUTANE	vg39b18.met	EB18.015	
16	Unknown	2MP/1,2,4-TMB	vg39b18.met	EB18.016	
17	Unknown	RINSE	vg39b18.met	EB18.017	
18	Unknown	PENTANE/NAPHTHALENE	vg39b18.met	EB18.018	
19	Unknown	UNDECANE/DODECANE	vg39b18.met	EB18.019	
20	Unknown	RINSE	vg39b18.met	EB18.020	
21	Unknown	BB	vg39b18.met	EB18.021	
22	Unknown	BB	vg39b18.met	EB18.022	
23	Unknown	BB	vg39b18.met	EB18.023	
24	Unknown	BB	vg39b18.met	EB18.024	
25	Unknown	IVG39B1803 500/40	vg39b18.met	EB18.025	ACCUSTANDARD ICV
26	Unknown	IVG39B1804 1000/50	vg39b18.met	EB18.026	
27	Unknown	BB	vg39b18.met	EB18.027	
28	Unknown	BB	vg39b18.met	EB18.028	
29	Unknown	BB	vg39b18.met	EB18.029	
30	Unknown	BB SC	vg39b18.met	EB18.030	
31	Unknown	BB 2/19/16	vg39b18.met	EB18.031	
32	Unknown	BB	vg39b18.met	EB18.032	
33	Unknown	BB	vg39b18.met	EB18.033	
34	Unknown	BB	vg39b18.met	EB18.034	

Method Development

Start | EZChrom Chromat... | Method: Vg39b18... | untitled - Paint | Method: Vg39... | Exploring - Export | Method: Vg55b18...

Friday, February 19, 2016 4:54 PM

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

VG39D22 (water): D183, D203, D197

GPD012 (soil): D201

Book #:	A39-054
Instrument No.:	39
Analytical Sequence:	ED29
Method File:	☑ VG39B18
	☐
	☐
Analytical Batch:	CVG39B18576

SOP #	Rev. #
☑ EMAX-5030B	3
☑ EMAX-8015G	5
☐ EMAX-AK101	2
☐ EMAX-	

STANDARDS ID	Amt Added (µL)	Conc. (mg/L)
ICAL		
ICAL	SC 4/29/16	
ICV		
ICV		
DCC GAS SV2-07-03-08	0.5ml	5000
DCC	SC	4/29/16
DCC		
BFB/TFT SV2-10-27-03 (Sample)	2ul	100
BFB/TFT ~~SV2-07-03-09~~ SC 4/29/16 (DCC)	2ul	100
LCS/LCSD SV2-07-03-09	0.5ml	5000
MS/MSD ↓	↓	↓
GRO (HC-Chain) SV2-07-03-07	4ul	2000

Solvent	ID/Lot #
Methanol	
Reagent Water	RW2-12-001
	Lot #
pH strip	HC573149

SYRINGES
☑ 5 mL - MSF-01-01-12
☐ 1 mL - MSF-01-01-20
☐ 500 µL - MSF-01-01-21
☐ 250 µL - MSF-01-01-22
☐ 100 µL - MSF-01-01-19
☑ 100 µL - MSF-01-02-16
☐ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-01-16
☑ 10 µL - MSF-01-01-23
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☑ EZC-3-BTEX	5/02/16

Analyzed By: SC

Date: 4/29/16

Method: Vg39b18.met Batch: Ed29.seq Data: Ed29.008 - [Batch: ed29.seq]

File Edit Method Batch Options Analysis Control Window Help

Run	Run Type	Sample ID	Method	Filename	Description
1	Unknown	IB39D2901	vg39b18.met	ED29.001	
2	Unknown	GRO-1	vg39b18.met	ED29.002	SV2-07-03-07
3	Unknown	CVG39B18576 500/40	vg39b18.met	ED29.003	
4	Unknown	VG39D22L 5.0ML W	vg39b18.met	ED29.004	Conc. 500/40
5	Unknown	VG39D22C 5.0ML W	vg39b18.met	ED29.005	
6	Unknown	VG39D22B 5.0ML W	vg39b18.met	ED29.006	
7	Unknown	16D183-01 5.0ML W	vg39b18.met	ED29.007	PH<2
8	Unknown	16D183-07 5.0ML W	vg39b18.met	ED29.008	PH<2
9	Unknown	16D183-13 5.0ML W	vg39b18.met	ED29.009	PH<2
10	Unknown	16D203-01 5.0ML W	vg39b18.met	ED29.010	PH~7
11	Unknown	16D203-01M 5.0ML W	vg39b18.met	ED29.011	PH~7
12	Unknown	16D203-01S 5.0ML W	vg39b18.met	ED29.012	PH~7 FINAL
13	Unknown	16D203-02 5.0ML W	vg39b18.met	ED29.013	PH~7
14	Unknown	16D183-08 5.0ML W	vg39b18.met	ED29.014	PH<2
15	Unknown	CVG39B18577 500/40	vg39b18.met	ED29.015	
16	Unknown	16D183-08M 5.0ML W	vg39b18.met	ED29.016	PH<2
17	Unknown	16D183-08S 5.0ML W	vg39b18.met	ED29.017	PH<2
18	Unknown	16D183-02I 1ML W DF=5	vg39b18.met	ED29.018	PH<2 STRONG ODOR
19	Unknown	16D183-03 5.0ML W	vg39b18.met	ED29.019	PH<2
20	Unknown	16D183-04I .5ML W DF=10	vg39b18.met	ED29.020	PH<2 STRONG ODOR
21	Unknown	16D183-05 5.0ML W	vg39b18.met	ED29.021	PH<2
22	Unknown	16D183-06 5.0ML W	vg39b18.met	ED29.022	PH<2
23	Unknown	16D183-09 5.0ML W	vg39b18.met	ED29.023	PH<2
24	Unknown	16D183-10 5.0ML W	vg39b18.met	ED29.024	PH<2
25	Unknown	16D183-11I 250uL W DF=20	vg39b18.met	ED29.025	PH<2 STRONG ODOR
26	Unknown	CVG39B18578 500/40	vg39b18.met	ED29.026	
27	Unknown	16D183-12I 100uL W DF=50	vg39b18.met	ED29.027	PH<2 STRONG ODOR
28	Unknown	16D197-01 5.0ML W	vg39b18.met	ED29.028	PH<2
29	Unknown	16D197-03 5.0ML W	vg39b18.met	ED29.029	PH<2
30	Unknown	16D197-04 5.0ML W	vg39b18.met	ED29.030	PH<2
31	Unknown	GPD012SB 100uL S	vg39b18.met	ED29.031	
32	Unknown	GPD012SL 100uL S	vg39b18.met	ED29.032	Conc. 500/40
33	Unknown	GPD012SC 100uL S	vg39b18.met	ED29.033	
34	Unknown	GPD012SQ 100uL S NOT evaluated	vg39b18.met	ED29.034	
35	Unknown	16D201-01 100uL S	vg39b18.met	ED29.035	
36	Unknown	CVG39B18579 500/40	vg39b18.met	ED29.036	
37	Unknown	~~BB~~ SC 4/29/16	vg39b18.met	ED29.037	

Start | EZChrom Chromat... | Method: Vg39... | untitled - Paint | Method: Vg55C01... | Calculator | Method: Vg39b18... | Exploring - Export | Friday, April 29, 2016 5:36 PM

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
PURGEABLE TPH

Note: For samples, relevant QCs/Standards extracted, refer to attached extraction sequence.

Comments:

SD6# D201

Book #.: E39-046

Preparation Batch: GPD012

Matrix soil

SOP	Rev. #
☑ EMAX-5035	3
☐ EMAX-AK101	2
☐ EMAX-	

Standards	ID	Amount Added (ml)
Surrogate	SV2-07-03-04	5ml
LCS/MS	SV2-07-03-09	25ml
Methanol	SW1A-005-16-14	5.0ml
Methanol w/ Surrogate	—	—

Reagent	Lot # / ID
Silica Sand	SW1B-002-69-15

SYRINGES
☑ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-01-18
☐

Prepared By: SC

Standard Added By: SC Checked By: [illegible]

Extract Location: VW06

Disposal By: Disposal Date:

EMAX LABORATORIES, INC.

FileID: GPD012S

PRESERVATION LOG FOR TPH

PrepBatchID	LabSampleID	Wi(g)	DateTime	Wf(g)	DateTime	Aliquot	Unit	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16GPD012S01	GPD012SB	32.09	4/29/16 17:10	37.09	4/29/16 17:11	5	g	5	5	5	1	
16GPD012S02	GPD012SL	32.86	4/29/16 17:10	37.86	4/29/16 17:11	5	g	5	5	5	1	
16GPD012S03	GPD012SC	32.58	4/29/16 17:11	37.59	4/29/16 17:12	5.01	g	5	5	5	1	
16GPD012S04	D201-01	27.728	4/29/16 17:11	35.01	4/29/16 17:12	7.282	g	5	5	5	0.69	Preweighed vial

Balance ID: 25451062. Calibration check was verified prior to use.

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)*(Ve/ExpVe)

☑ Extraction Started @ 4/29/16 17:10

☑ EMAX-5035 Rev. No. 2

Prepared By: SCerva

☑ Extraction Ended @ 4/29/16 17:12

☑ Volumetric dispenser was checked with 5 mL Volumetric Flask

Checked By: [illegible]

Comments:

Date 4/29/2016

TPH - EXTRACTION

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	04/28/16
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID	: CAFB-IDW-S-042816	Date Analyzed:	04/29/16 21:43
Lab Samp ID	: D201-01	Dilution Factor:	1
Lab File ID	: LD29042A	Matrix :	SOIL
Ext Btch ID	: DSD037S	% Moisture :	20.3
Calib. Ref.	: LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	13	3.1	6.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	101	125.5	80.5	60-130
HEXACOSANE	30.7	31.37	97.8	60-130

Parameter	H-C Range
DRO	C10-C24

METHOD SW3550B/8015C
OIL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	04/28/16
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID	: CAFB-IDW-S-042816	Date Analyzed:	04/29/16 21:43
Lab Samp ID	: D201-01	Dilution Factor:	1
Lab File ID	: LD29042A	Matrix :	SOIL
Ext Btch ID	: DSD037S	% Moisture :	20.3
Calib. Ref.	: LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
ORO	ND	25	3.1	6.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	101	125.5	80.5	60-130
HEXACOSANE	30.7	31.37	97.8	60-130

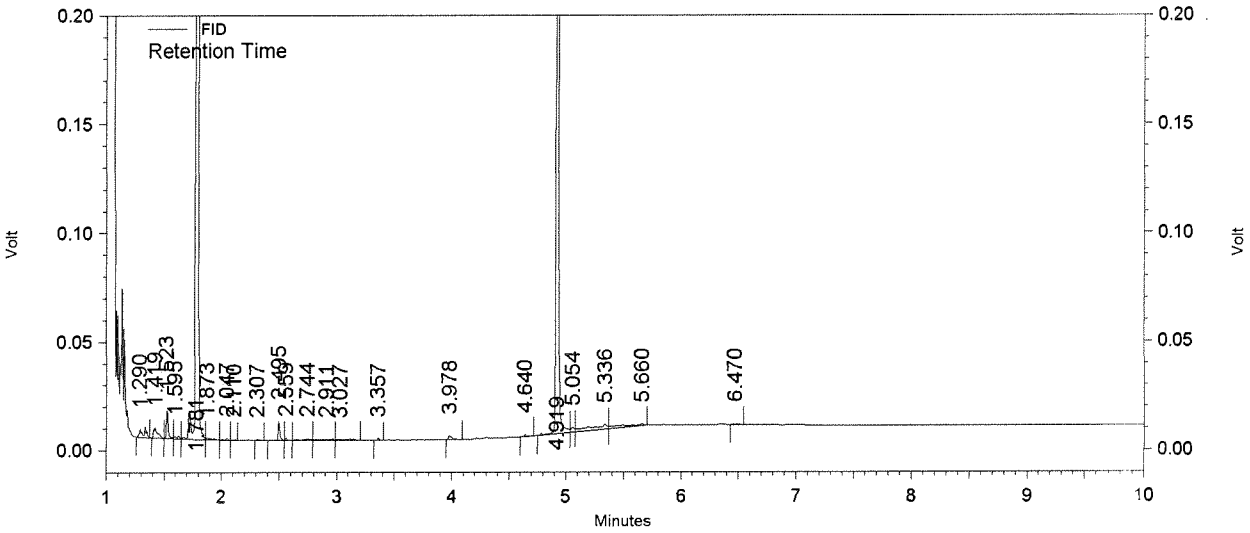
Parameter	H-C Range
ORO	C24-C36

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LD29\LD29042.dat
Method : D:\Projects\EZC331\Method\2016 METHODS\DSD5C09M.met
Sequence: : D:\Projects\EZC331\Sequence\LD29.seq
Sample ID : 16D201-01
Acquired : 04/29/16 21:43:04
Printed : 05/02/16 10:31:54
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.781	1525871	18960.74371	80.475
HEXACOSANE	4.919	657903	26912.93293	24.446
DIESEL(TOTAL)		117693	33338.55952	3.530
DIESEL(C10-C24)		31819	31896.87324	0.998
M.OIL(C24-C36)		39182	19873.41117	1.972
Totals		2372468		111.420



Software Version: Version 3.3.1

QC SUMMARIES

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID	: MBLK1S	Date Analyzed:	04/29/16 20:18
Lab Samp ID	: DSD037SB	Dilution Factor:	1
Lab File ID	: LD29037A	Matrix :	SOIL
Ext Btch ID	: DSD037S	% Moisture :	NA
Calib. Ref.	: LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	84.5	100.0	84.5	60-130
HEXACOSANE	23.7	25.00	94.8	60-130

Parameter	H-C Range
DRO	C10-C24

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16D201
METHOD: SW3550B/8015C

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	DSD037SB	DSD037SL	DSD037SC		
LAB FILE ID:	LD29037A	LD29038A	LD29039A		
DATE EXTRACTED:	04/29/1614:40	04/29/1614:40	04/29/1614:40	DATE COLLECTED:	NA
DATE ANALYZED:	04/29/1620:18	04/29/1620:35	04/29/1620:52	DATE RECEIVED:	04/29/16
PREP. BATCH:	DSD037S	DSD037S	DSD037S		
CALIB. REF:	LD29035A	LD29035A	LD29035A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
DRO	ND	500	465	93	500	444	89	5	60-150	30

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromobenzene	100	88.3	88	100	89.2	89	60-130
Hexacosane	25.0	24.4	98	25.0	24.9	99	60-130

METHOD SW3550B/8015C
OIL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	NA
Project	: CANNON AFB PBR	Date Received:	04/29/16
Batch No.	: 16D201	Date Extracted:	04/29/16 14:40
Sample ID	: MBLK1S	Date Analyzed:	04/29/16 20:18
Lab Samp ID	: DSD037SB	Dilution Factor:	1
Lab File ID	: LD29037A	Matrix :	SOIL
Ext Btch ID	: DSD037S	% Moisture :	NA
Calib. Ref.	: LD29035A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
ORO	ND	20	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	84.5	100.0	84.5	60-130
HEXACOSANE	23.7	25.00	94.8	60-130

Parameter	H-C Range
ORO	C24-C36

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: URS CORPORATION
PROJECT: CANNON AFB PBR
BATCH NO.: 16D201
METHOD: SW3550B/8015C

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	DSD037SB	DSD037SX	DSD037SY		
LAB FILE ID:	LD29037A	LD29040A	LD29041A		
DATE EXTRACTED:	04/29/1614:40	04/29/1614:40	04/29/1614:40	DATE COLLECTED:	NA
DATE ANALYZED:	04/29/1620:18	04/29/1621:09	04/29/1621:26	DATE RECEIVED:	04/29/16
PREP. BATCH:	DSD037S	DSD037S	DSD037S		
CALIB. REF:	LD29035A	LD29035A	LD29035A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ORO	ND	500	405	81	500	402	80	1	50-150	30

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromobenzene	100	85.8	86	100	85.9	86	60-130
Hexacosane	25.0	24.8	99	25.0	24.3	97	60-130

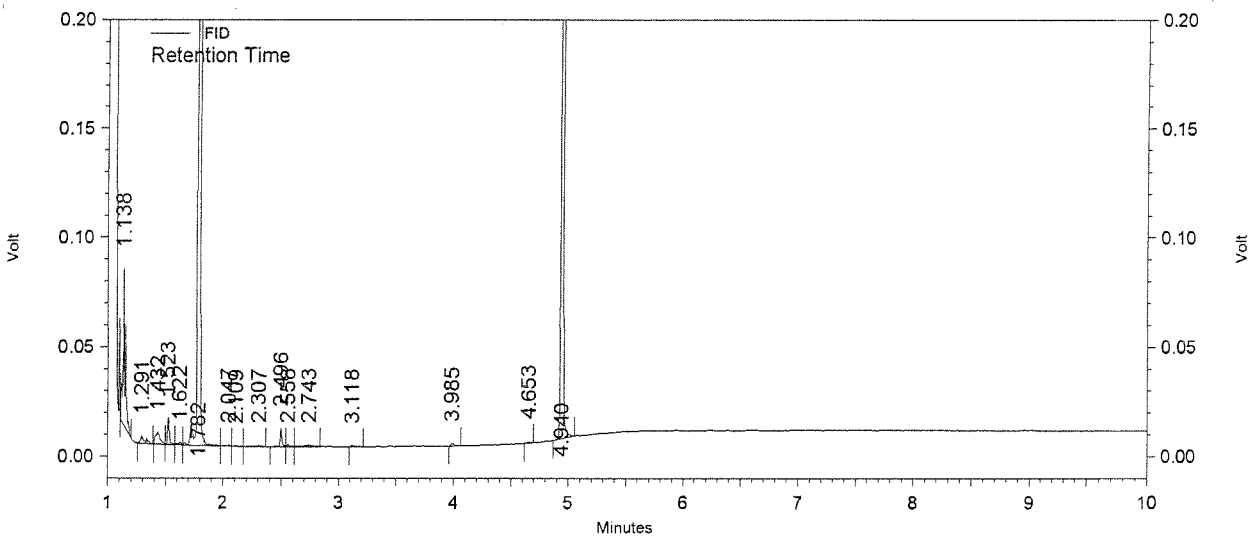
QC DATA

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29037.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: DSD037SB**
Acquired	**: 04/29/16 20:18:09**
Printed	**: 05/02/16 10:28:52**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.782	1602464	18960.74371	84.515
HEXACOSANE	4.940	637550	26912.93293	23.689
DIESEL(TOTAL)		65520	33338.55952	1.965
DIESEL(C10-C24)		24047	31896.87324	0.754
M.OIL(C24-C36)		0	19873.41117	0.000
Totals		2329581		110.923



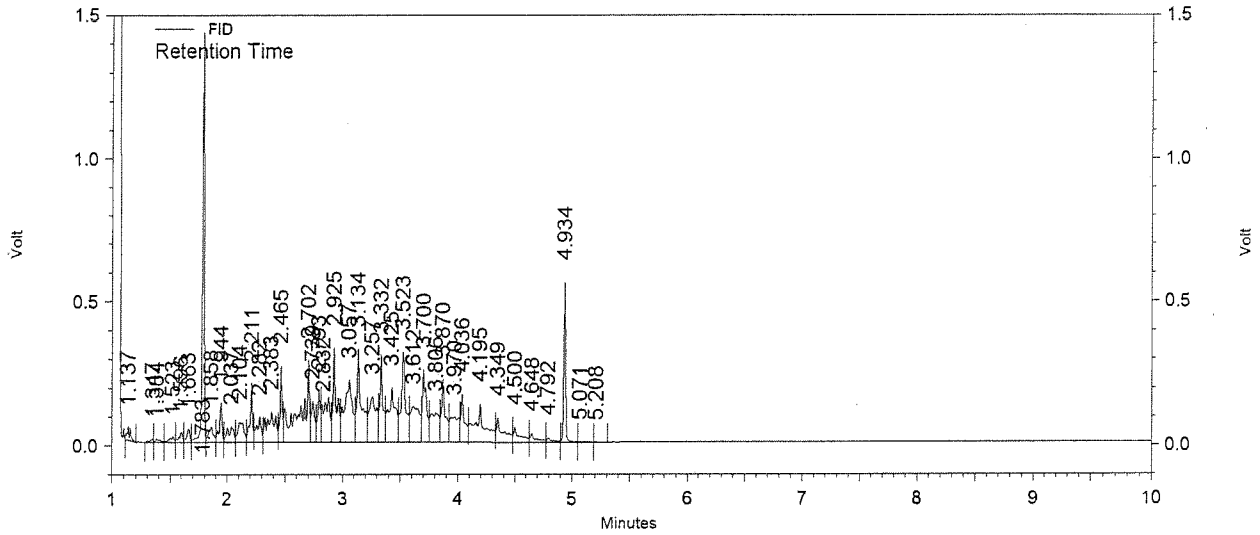
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29038.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: DSD037SL DSL**
Acquired	**: 04/29/16 20:35:04**
Printed	**: 05/02/16 10:29:42**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.783	1674451	18960.74371	88.311
HEXACOSANE	4.934	656301	26912.93293	24.386
DIESEL(TOTAL)		15593395	33338.55952	467.729
DIESEL(C10-C24)		14832842	31896.87324	465.025
M.OIL(C24-C36)		49180	19873.41117	2.475
Totals		32806169		1047.926



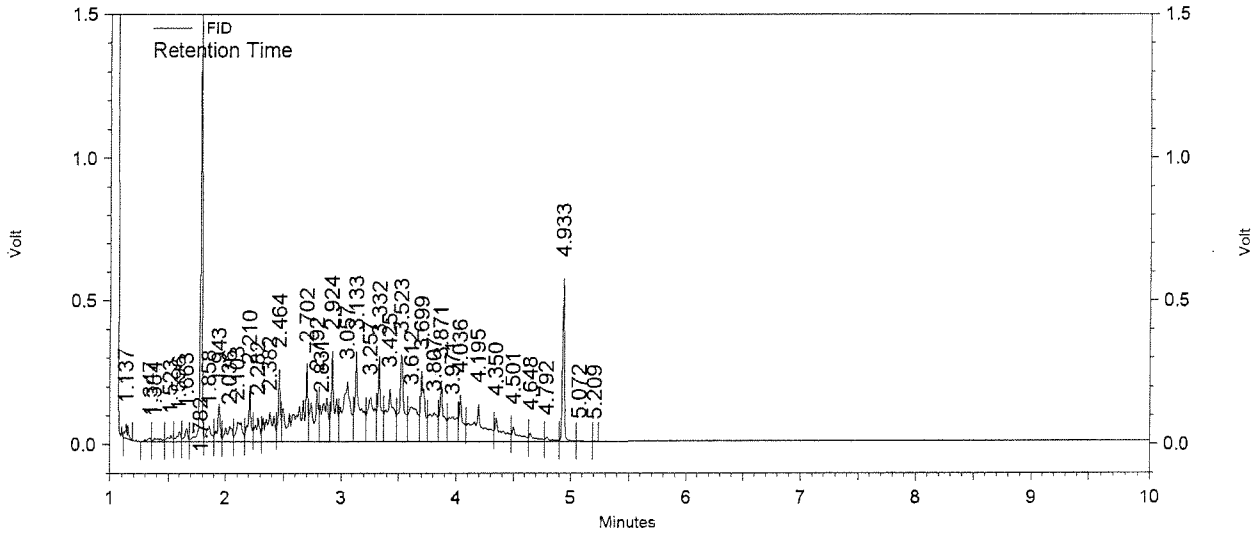
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29039.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: DSD037SC DSL**
Acquired	**: 04/29/16 20:52:13**
Printed	**: 05/02/16 10:29:55**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.782	1691586	18960.74371	89.215
HEXACOSANE	4.933	669408	26912.93293	24.873
DIESEL(TOTAL)		14879425	33338.55952	446.313
DIESEL(C10-C24)		14161303	31896.87324	443.972
M.OIL(C24-C36)		47125	19873.41117	2.371
Totals		31448847		1006.744



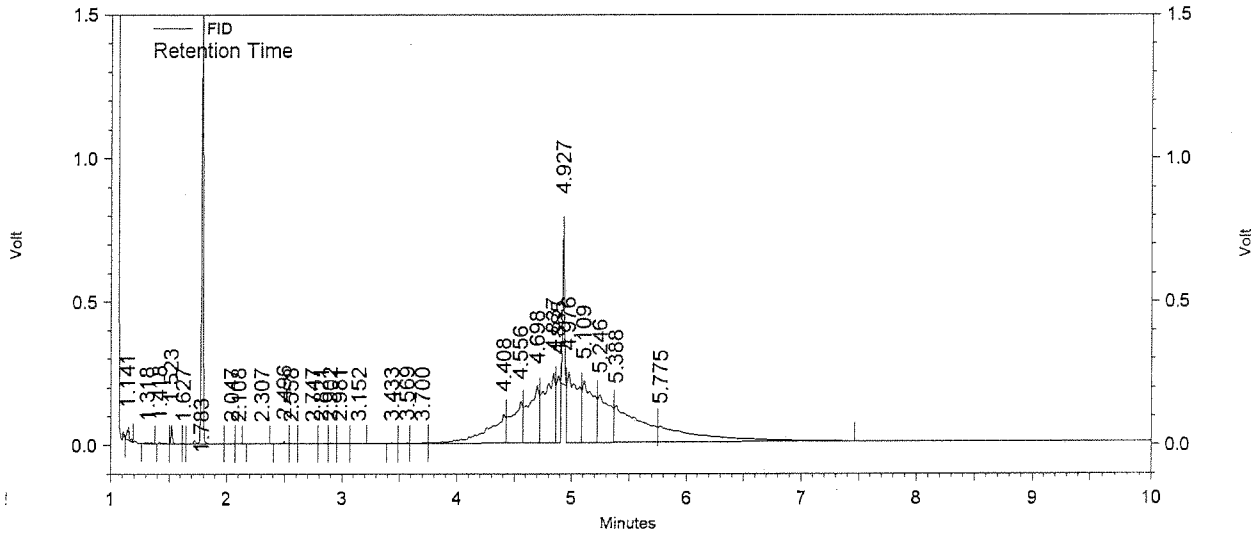
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29040.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: DSD037SX 5W30**
Acquired	**: 04/29/16 21:09:08**
Printed	**: 05/02/16 10:30:50**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.783	1626341	18960.74371	85.774
HEXACOSANE	4.927	667003	26912.93293	24.784
DIESEL(TOTAL)		11494727	33338.55952	344.788
DIESEL(C10-C24)		3362609	31896.87324	105.421
M.OIL(C24-C36)		8043837	19873.41117	404.754
Totals		25194517		965.521



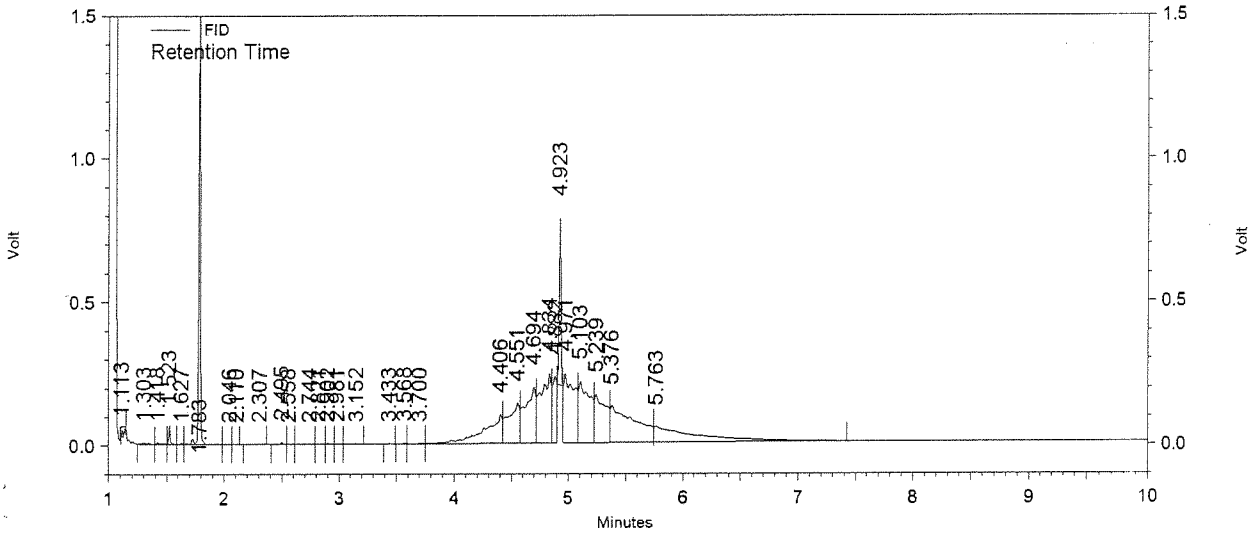
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29041.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: DSD037SY 5W30**
Acquired	**: 04/29/16 21:26:05**
Printed	**: 05/02/16 10:31:35**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.783	1629640	18960.74371	85.948
HEXACOSANE	4.923	655153	26912.93293	24.343
DIESEL(TOTAL)		11415611	33338.55952	342.415
DIESEL(C10-C24)		3317543	31896.87324	104.008
M.OIL(C24-C36)		7998597	19873.41117	402.477
Totals		25016544		959.192



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: LC09020A 03/09/16 18:37
LFID & Datetime: LC09021A 03/09/16 18:54
LFID & Datetime: LC09022A 03/09/16 19:11
LFID & Datetime: LC09023A 03/09/16 19:28
LFID & Datetime: LC09024A 03/09/16 19:44
LFID & Datetime: LC09025A 03/09/16 20:01
LFID & Datetime: LC09026A 03/09/16 20:18
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	34483	24086	33058	36267	35580	33936	35960	33338.6	12.7	✓
DIESEL(C10-C24)	5.00	33406	22896	31703	34710	33825	32391	34346	31896.9	12.9	✓
DIESEL(C10-C28)	5.00	33406	22896	31703	34739	33904	32486	34403	31933.8	12.9	✓
DIESEL(C10-C25)	5.00	33406	22896	31703	34733	33889	32465	34403	31927.8	12.9	✓
DIESEL(C9-C24)	5.00	34483	23684	32532	35627	34908	33286	35297	32831.0	12.7	✓
DIESEL(C9-C25)	5.00	34483	23684	32532	35649	34972	33360	35354	32861.9	12.8	✓
DIESEL(C10-C36)	5.00	33406	22896	31703	34739	33904	32487	34403	31934.0	12.9	✓
DIESEL(C10-C40)	5.00	33406	22896	31703	34739	33904	32487	34403	31934.0	12.9	✓
SURROGATE	X	0.00X	1.00X	2.00X	3.00X	4.00X	5.00X	11.00X	MEAN	%RSD	
BROMOBENZENE	20.00	0	18113	17965	18747	18987	19607	20346	18960.7	4.8	✓
HEXACOSANE	5.00	0	26129	25738	27569	26667	27814	27561	26912.9	3.2	✓

DSD5C09.MET

AA
03/15/16

FORM VI DIESEL -2 1/96 Rev 2/2006

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LC09020A 03/09/16 18:37
LFID & Datetime: LC09021A 03/09/16 18:54
LFID & Datetime: LC09022A 03/09/16 19:11
LFID & Datetime: LC09023A 03/09/16 19:28
LFID & Datetime: LC09024A 03/09/16 19:44
LFID & Datetime: LC09025A 03/09/16 20:01
LFID & Datetime: LC09026A 03/09/16 20:18

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	1.793	1.793	1.794	1.795	1.796	1.798	1.795	1.785	1.805	0.010
HEXACOSANE	0.000	4.985	4.980	4.977	4.969	4.963	4.959	4.972	4.778	5.166	0.194

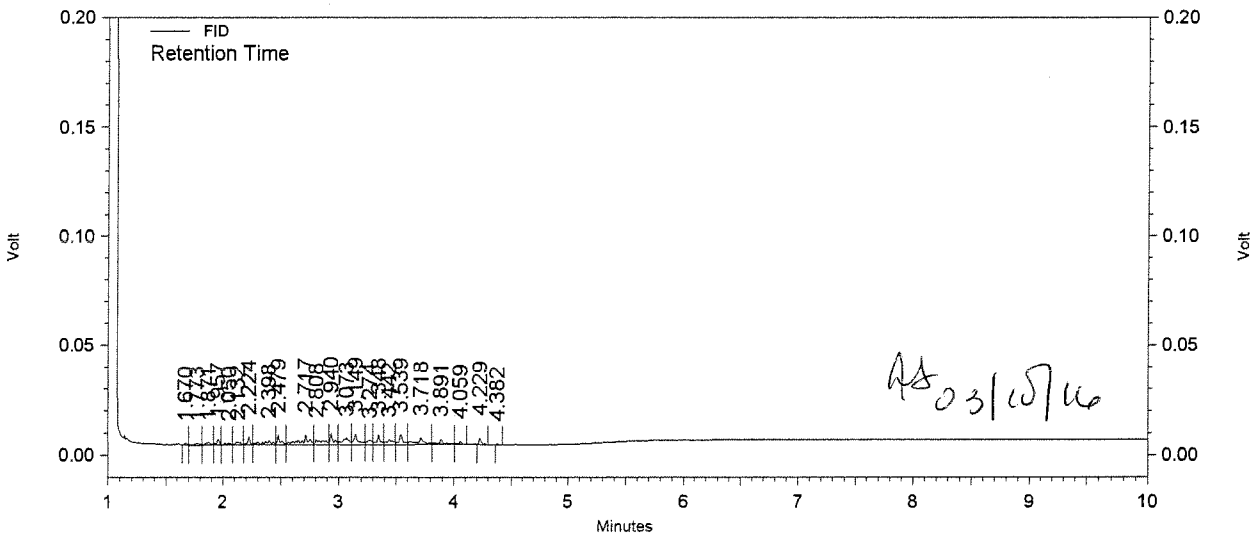
AS
03/15/16.

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09020.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09001 DSL 5PPM**
Acquired	**: 03/09/16 18:37:27**
Printed	**: 03/10/16 11:00:16**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
DIESEL(TOTAL)		172415	33338.55952	5.000 CAL
DIESEL(C10-C24)		167030	31896.87324	5.000 CAL
DIESEL(C10-C28)		167030	31933.82919	5.000 CAL
DIESEL(C10-C25)		167030	31927.78586	5.000 CAL
DIESEL(C9-C24)		172415	32831.02281	5.000 CAL
DIESEL(C9-C25)		172415	32861.93543	5.000 CAL
DIESEL(C10-C36)		167030	31933.96090	5.000 CAL
DIESEL(C10-C40)		167030	31933.96090	5.000 CAL
Totals		1352395		40.000 CAL



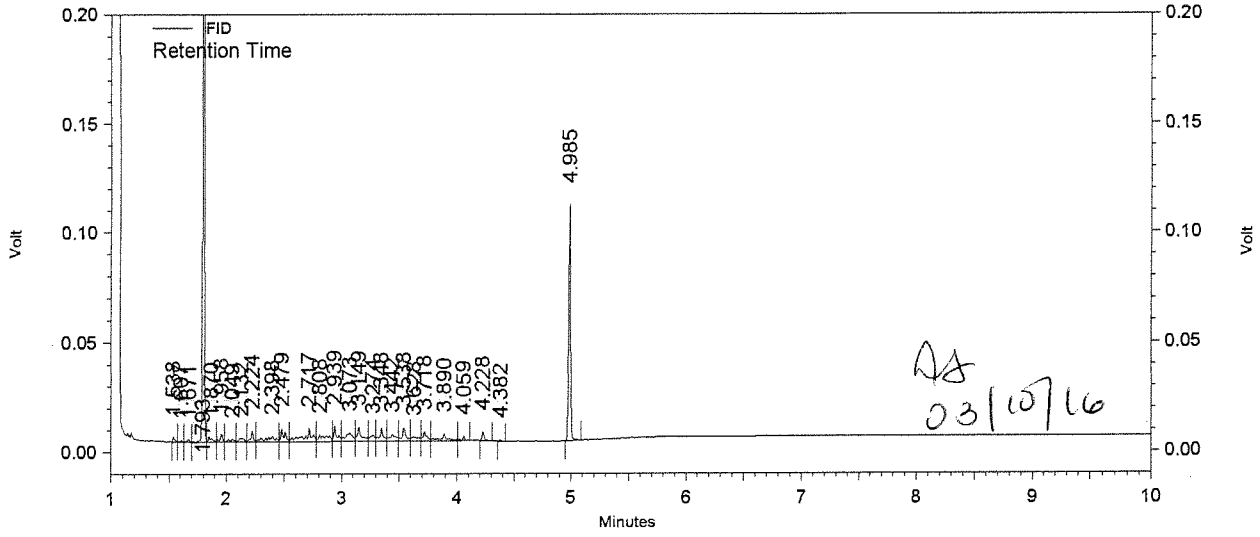
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09021.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09002 DSL 10/20/5PPM**
Acquired	**: 03/09/16 18:54:18**
Printed	**: 03/10/16 11:00:52**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.793	362269	18960.74371	20.000 CAL
HEXACOSANE	4.985	130643	26912.93293	5.000 CAL
DIESEL(TOTAL)		240864	33338.55952	10.000 CAL
DIESEL(C10-C24)		228963	31896.87324	10.000 CAL
DIESEL(C10-C28)		228963	31933.82919	10.000 CAL
DIESEL(C10-C25)		228963	31927.78586	10.000 CAL
DIESEL(C9-C24)		236837	32831.02281	10.000 CAL
DIESEL(C9-C25)		236837	32861.93543	10.000 CAL
DIESEL(C10-C36)		228963	31933.96090	10.000 CAL
DIESEL(C10-C40)		228963	31933.96090	10.000 CAL
Totals		2352265		105.000 CAL



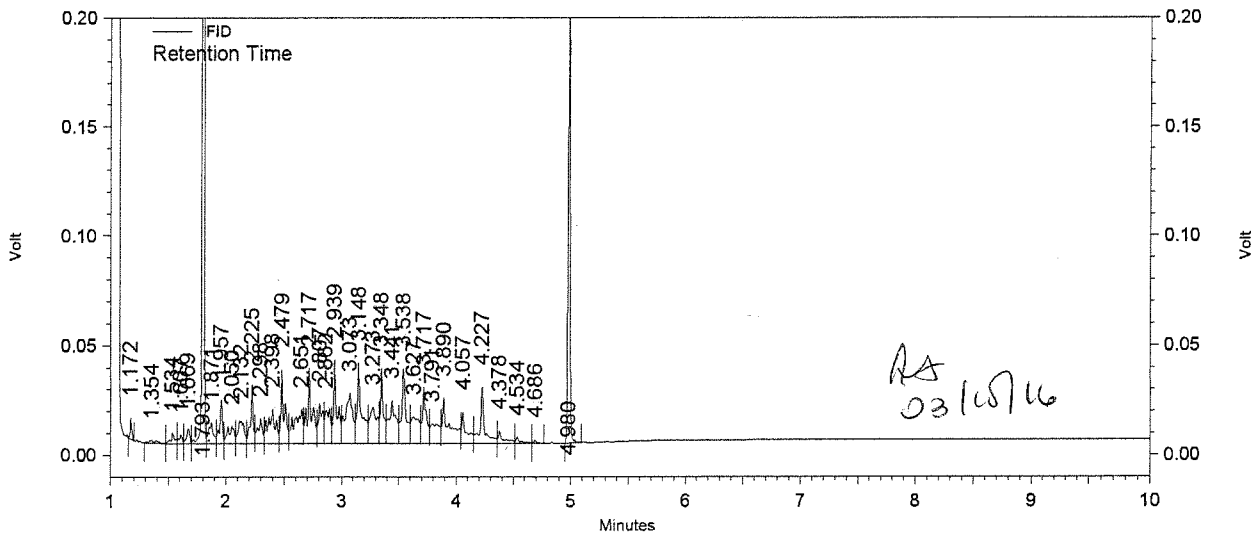
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LC09\LC09022.dat
Method : D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met
Sequence: : D:\Projects\EZC331\Sequence\LC09.seq
Sample ID : DSD5C09003 DSL 50/40/10PPM
Acquired : 03/09/16 19:11:11
Printed : 03/10/16 11:01:17
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.793	718586	18960.74371	40.000 CAL
HEXACOSANE	4.980	257376	26912.93293	10.000 CAL
DIESEL(TOTAL)		1652900	33338.55952	50.000 CAL
DIESEL(C10-C24)		1585139	31896.87324	50.000 CAL
DIESEL(C10-C28)		1585139	31933.82919	50.000 CAL
DIESEL(C10-C25)		1585139	31927.78586	50.000 CAL
DIESEL(C9-C24)		1626585	32831.02281	50.000 CAL
DIESEL(C9-C25)		1626585	32861.93543	50.000 CAL
DIESEL(C10-C36)		1585139	31933.96090	50.000 CAL
DIESEL(C10-C40)		1585139	31933.96090	50.000 CAL
Totals		13807727		450.000 CAL



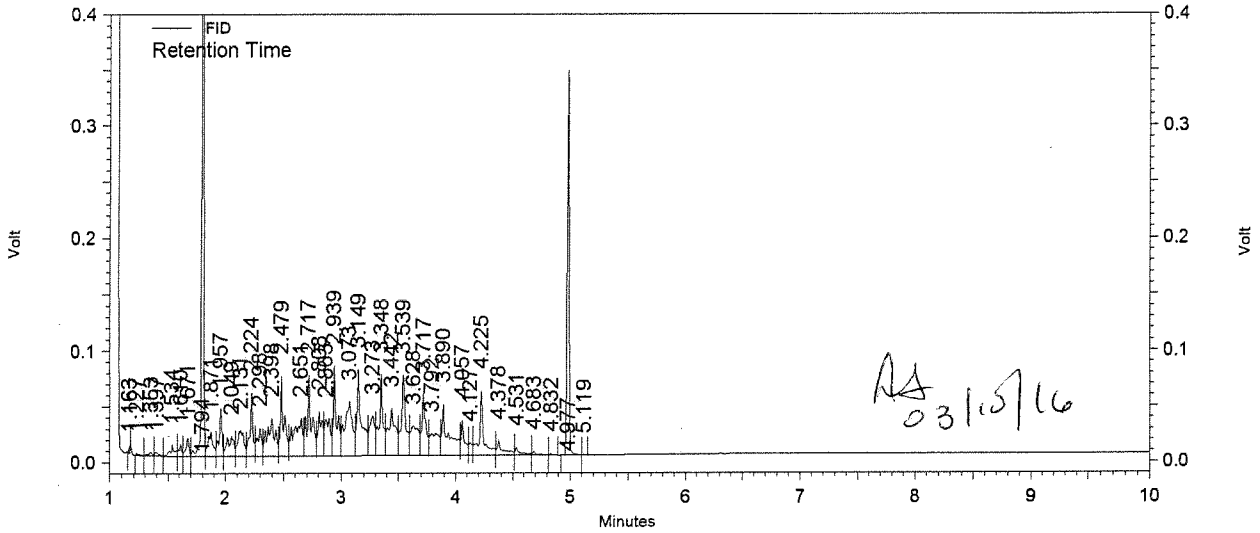
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09023.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09004 DSL 100/60/15PPM**
Acquired	**: 03/09/16 19:28:00**
Printed	**: 03/10/16 11:02:07**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.794	1124832	18960.74371	60.000 CAL
HEXACOSANE	4.977	413536	26912.93293	15.000 CAL
DIESEL(TOTAL)		3626676	33338.55952	100.000 CAL
DIESEL(C10-C24)		3471033	31896.87324	100.000 CAL
DIESEL(C10-C28)		3473880	31933.82919	100.000 CAL
DIESEL(C10-C25)		3473256	31927.78586	100.000 CAL
DIESEL(C9-C24)		3562650	32831.02281	100.000 CAL
DIESEL(C9-C25)		3564873	32861.93543	100.000 CAL
DIESEL(C10-C36)		3473880	31933.96090	100.000 CAL
DIESEL(C10-C40)		3473880	31933.96090	100.000 CAL
Totals		29658496		875.000 CAL



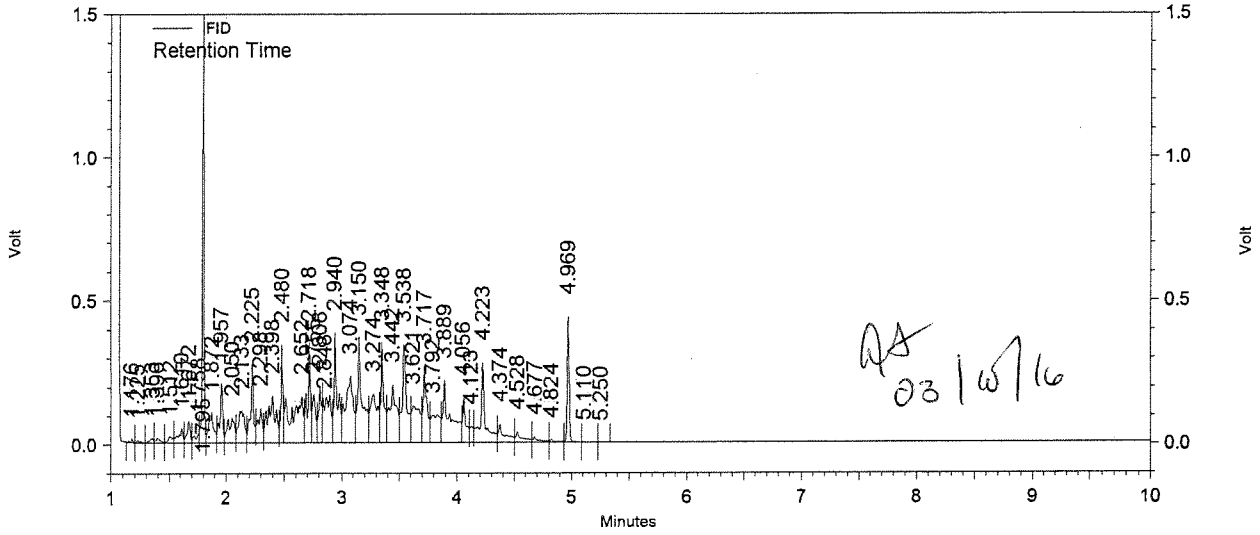
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09024.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09005 DSL 500/80/20PPM**
Acquired	**: 03/09/16 19:44:59**
Printed	**: 03/10/16 11:03:24**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.795	1518926	18960.74371	80.000 CAL
HEXACOSANE	4.969	533348	26912.93293	20.000 CAL
DIESEL(TOTAL)		17790131	33338.55952	500.000 CAL
DIESEL(C10-C24)		16912740	31896.87324	500.000 CAL
DIESEL(C10-C28)		16952156	31933.82919	500.000 CAL
DIESEL(C10-C25)		16944599	31927.78586	500.000 CAL
DIESEL(C9-C24)		17454237	32831.02281	500.000 CAL
DIESEL(C9-C25)		17486096	32861.93543	500.000 CAL
DIESEL(C10-C36)		16952156	31933.96090	500.000 CAL
DIESEL(C10-C40)		16952156	31933.96090	500.000 CAL
Totals		139496545		4100.000 CAL



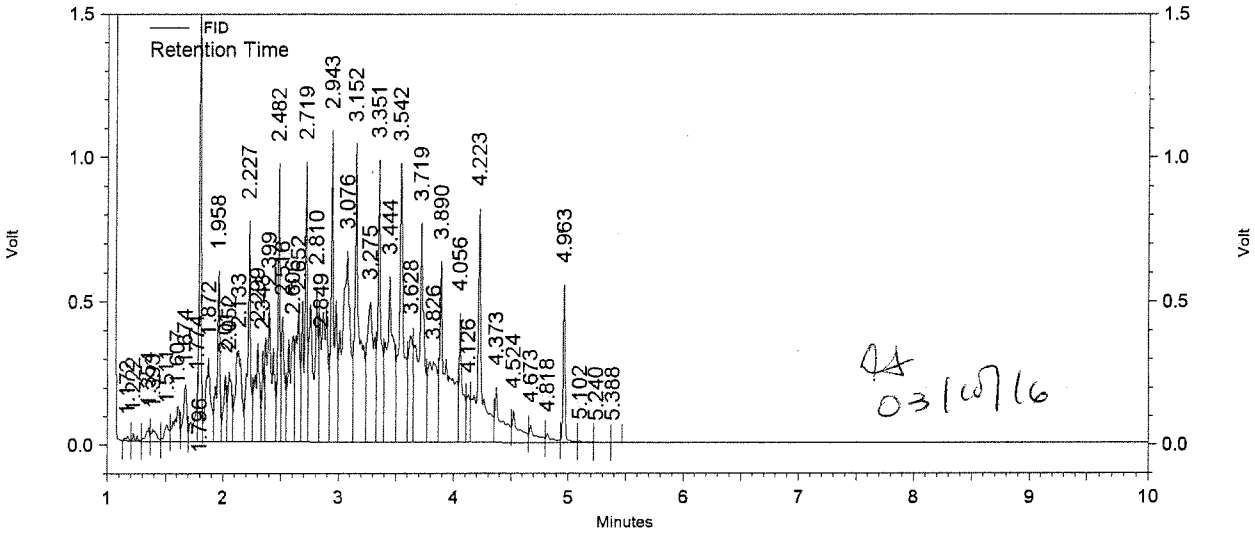
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09025.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09006 DSL 1500/100/25PPM**
Acquired	**: 03/09/16 20:01:56**
Printed	**: 03/10/16 11:04:04**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.796	1960661	18960.74371	100.000 CAL
HEXACOSANE	4.963	695351	26912.93293	25.000 CAL
DIESEL(TOTAL)		50903780	33338.55952	1500.000 CAL
DIESEL(C10-C24)		48586837	31896.87324	1500.000 CAL
DIESEL(C10-C28)		48729113	31933.82919	1500.000 CAL
DIESEL(C10-C25)		48697689	31927.78586	1500.000 CAL
DIESEL(C9-C24)		49929534	32831.02281	1500.000 CAL
DIESEL(C9-C25)		50040386	32861.93543	1500.000 CAL
DIESEL(C10-C36)		48730496	31933.96090	1500.000 CAL
DIESEL(C10-C40)		48730496	31933.96090	1500.000 CAL
Totals		397004343		12125.000 CAL



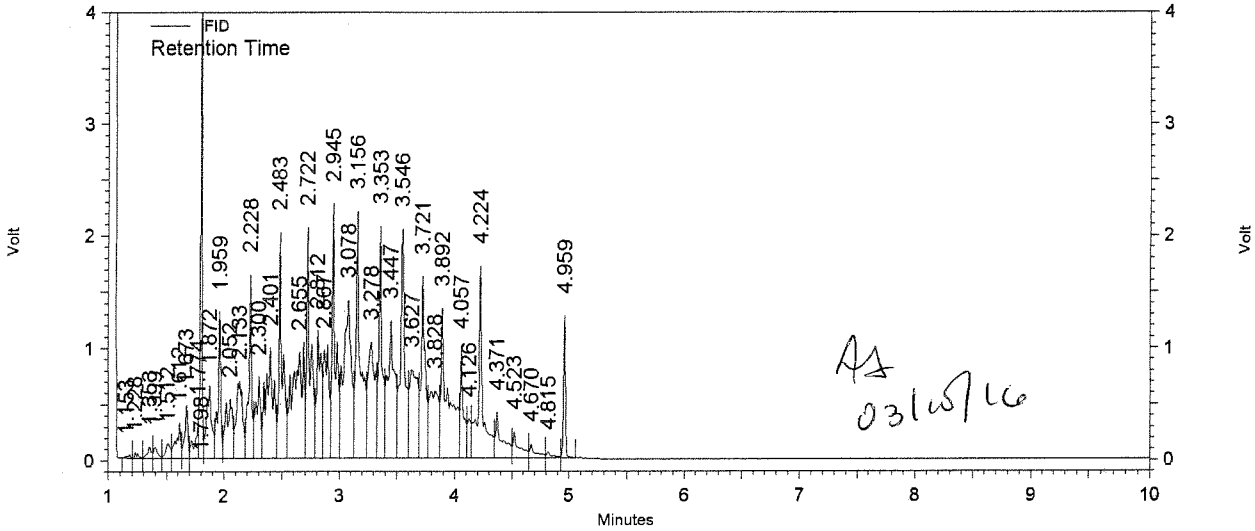
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LC09\LC09026.dat
Method : D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met
Sequence: : D:\Projects\EZC331\Sequence\LC09.seq
Sample ID : DSD5C09007 DSL 3000/220/55PPM
Acquired : 03/09/16 20:18:52
Printed : 03/10/16 11:05:20
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.798	4476115	18960.74371	220.000 CAL
HEXACOSANE	4.959	1515849	26912.93293	55.000 CAL
DIESEL(TOTAL)		107878924	33338.55952	3000.000 CAL
DIESEL(C10-C24)		103037994	31896.87324	3000.000 CAL
DIESEL(C10-C28)		103207611	31933.82919	3000.000 CAL
DIESEL(C10-C25)		103207611	31927.78586	3000.000 CAL
DIESEL(C9-C24)		105892289	32831.02281	3000.000 CAL
DIESEL(C9-C25)		106061906	32861.93543	3000.000 CAL
DIESEL(C10-C36)		103207611	31933.96090	3000.000 CAL
DIESEL(C10-C40)		103207611	31933.96090	3000.000 CAL
Totals		841693521		24275.000 CAL



Software Version: Version 3.3.1

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LC09029A 03/09/16 21:09
LFID & Datetime: LC09030A 03/09/16 21:26
LFID & Datetime: LC09031A 03/09/16 21:43
LFID & Datetime: LC09032A 03/09/16 22:00
LFID & Datetime: LC09033A 03/09/16 22:17
LFID & Datetime: LC09034A 03/09/16 22:34
CONC UNIT: ppm

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	20.00X	100.00X	200.00X	300.00X	MEAN	%RSD
JP5(C8-C18)	5.00	33780	33088	32527	31275	31846	32044	32426.5	2.8
M.OIL(C18-C36)	5.00	20655	23230	22235	21817	24986	24279	22867.0	7.1
M.OIL(C24-C36)	5.00	18470	20252	19189	18857	21542	20932	19873.4	6.2
M.OIL(C24-C40)	5.00	18470	20252	19189	18857	21542	20932	19873.4	6.2

DSD5C09.MET

AS
03/18/16

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LC09029A 03/09/16 21:09
LFID & Datetime: LC09030A 03/09/16 21:26
LFID & Datetime: LC09031A 03/09/16 21:43
LFID & Datetime: LC09032A 03/09/16 22:00
LFID & Datetime: LC09033A 03/09/16 22:17
LFID & Datetime: LC09034A 03/09/16 22:34

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	20.0X	100.0X	200.0X	300.0X	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

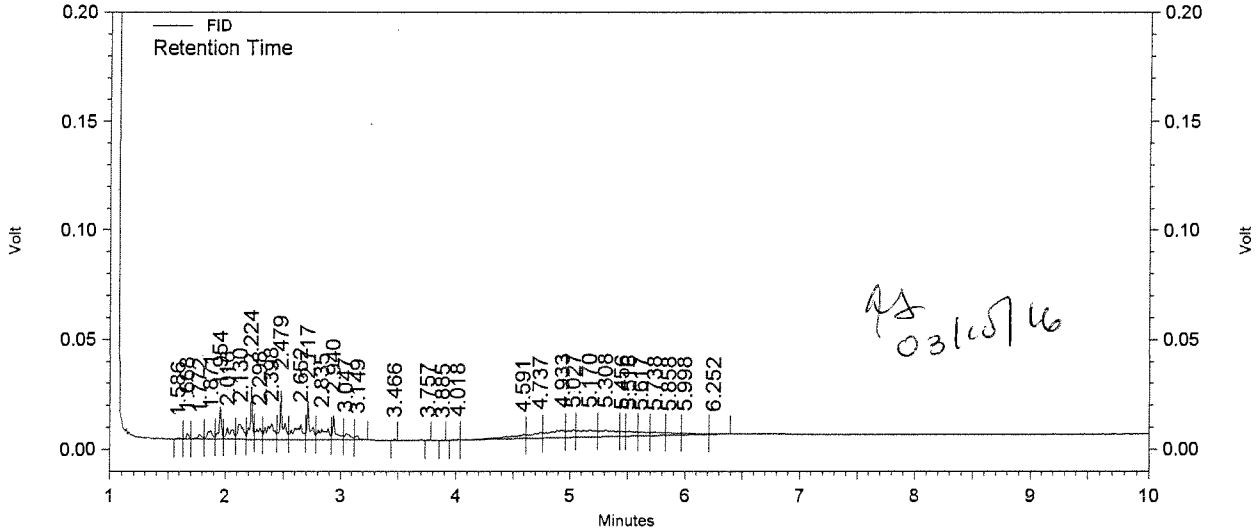
AA
03/10/16

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09029.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09008 JP5/5W30 10/10PPM**
Acquired	**: 03/09/16 21:09:22**
Printed	**: 03/10/16 11:07:30**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		337795	32426.51678	10.000 CAL
M.OIL(C18-C36)		206549	22866.97517	10.000 CAL
M.OIL(C24-C36)		184695	19873.41117	10.000 CAL
M.OIL(C24-C40)		184695	19873.41117	10.000 CAL
Totals		913734		40.000 CAL



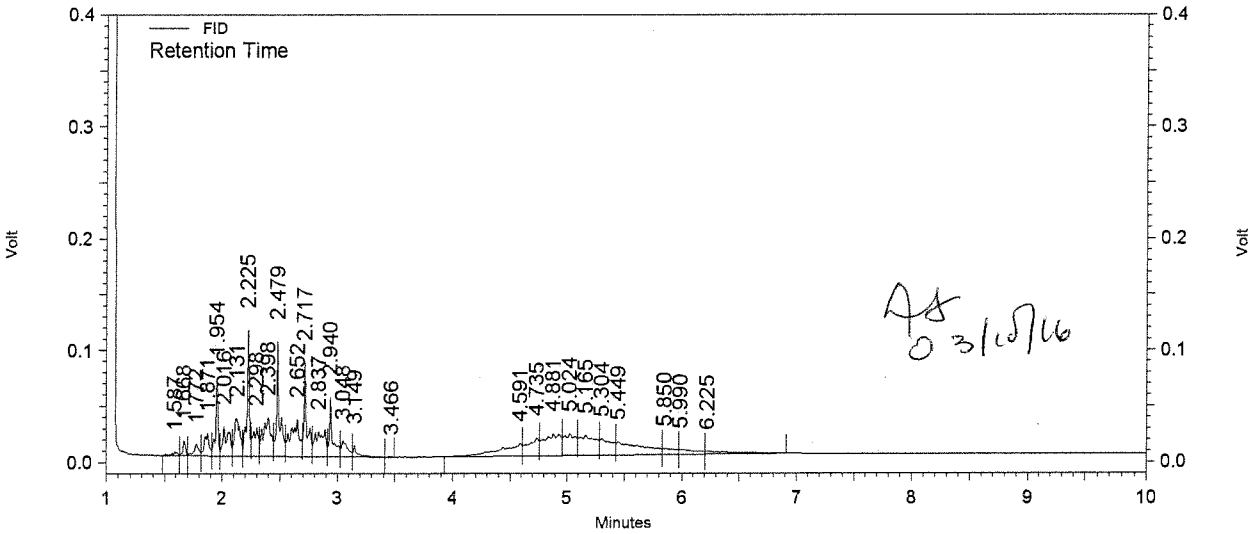
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09030.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09009 JP5/5W30 50/50PPM**
Acquired	**: 03/09/16 21:26:26**
Printed	**: 03/10/16 11:08:16**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		1654376	32426.51678	50.000 CAL
M.OIL(C18-C36)		1161519	22866.97517	50.000 CAL
M.OIL(C24-C36)		1012583	19873.41117	50.000 CAL
M.OIL(C24-C40)		1012583	19873.41117	50.000 CAL
Totals		4841061		200.000 CAL



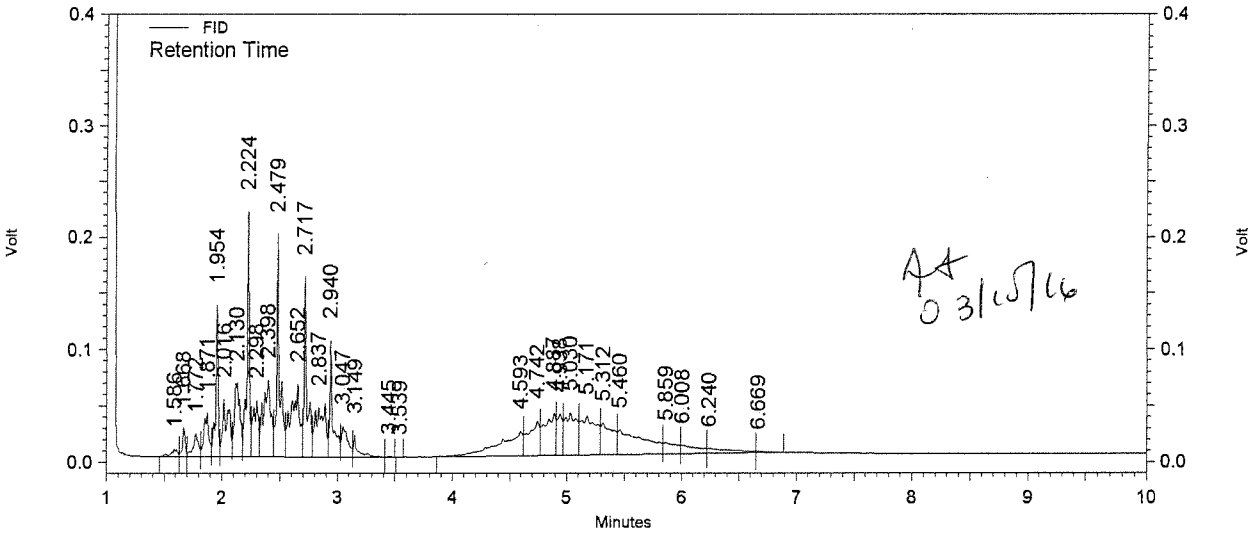
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09031.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09010 JP5/5W30 100/100PPM**
Acquired	**: 03/09/16 21:43:15**
Printed	**: 03/10/16 11:08:58**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		3252730	32426.51678	100.000 CAL
M.OIL(C18-C36)		2223453	22866.97517	100.000 CAL
M.OIL(C24-C36)		1918857	19873.41117	100.000 CAL
M.OIL(C24-C40)		1918857	19873.41117	100.000 CAL
Totals		9313897		400.000 CAL



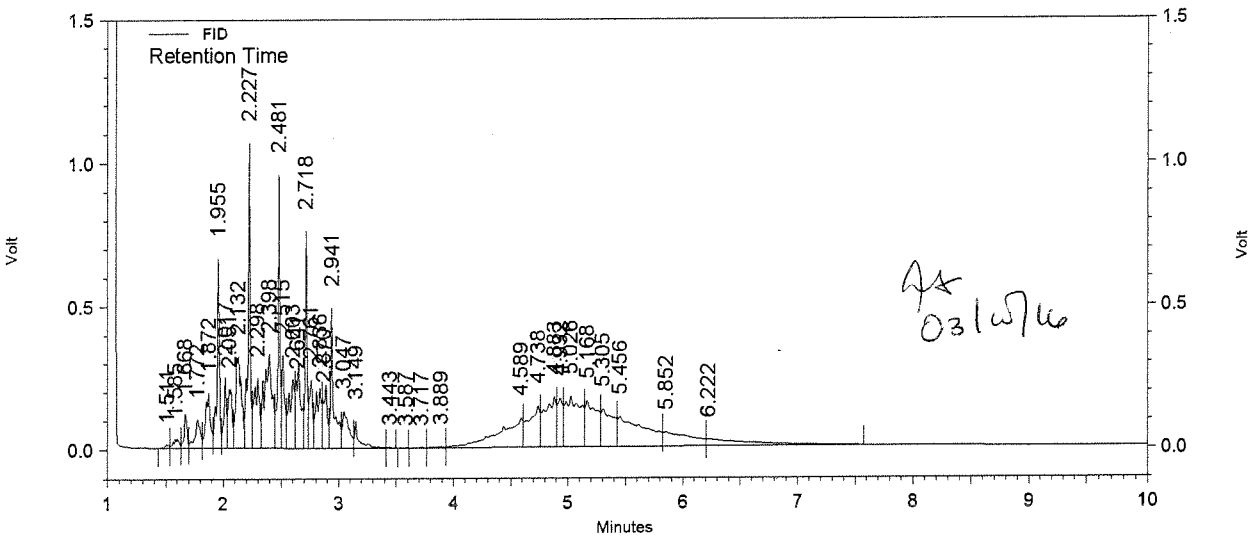
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09032.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09011 JP5/5W30 500/500PPM**
Acquired	**: 03/09/16 22:00:23**
Printed	**: 03/10/16 11:09:26**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		15637253	32426.51678	500.000 CAL
M.OIL(C18-C36)		10908561	22866.97517	500.000 CAL
M.OIL(C24-C36)		9428406	19873.41117	500.000 CAL
M.OIL(C24-C40)		9428406	19873.41117	500.000 CAL
Totals		45402626		2000.000 CAL



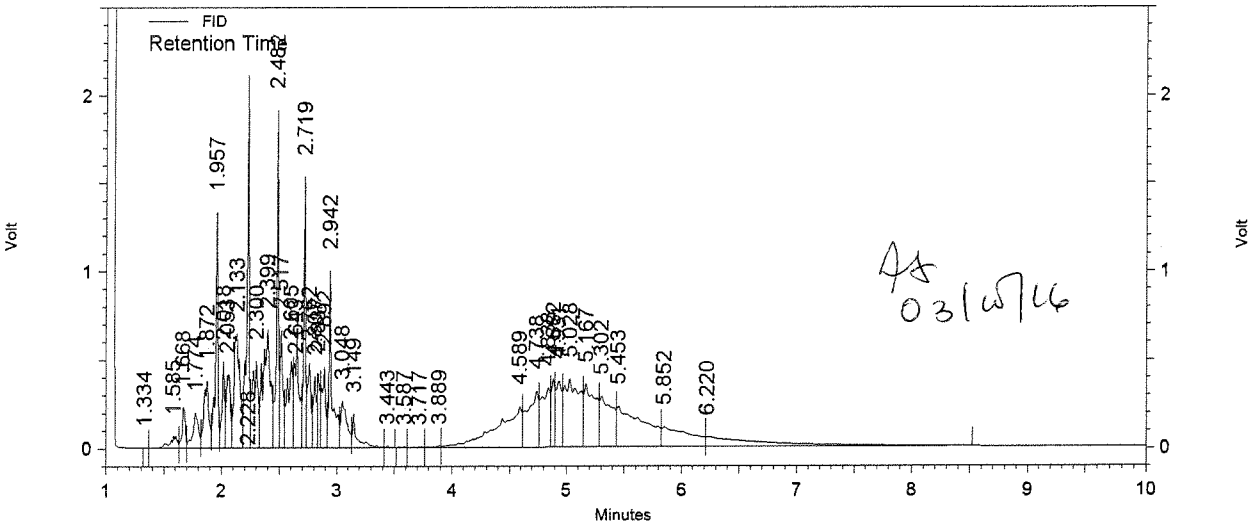
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09033.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09012 JP5/5W30 1000/1000PPM**
Acquired	**: 03/09/16 22:17:19**
Printed	**: 03/10/16 11:10:11**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		31846092	32426.51678	1000.000 CAL
M.OIL(C18-C36)		24986259	22866.97517	1000.000 CAL
M.OIL(C24-C36)		21541873	19873.41117	1000.000 CAL
M.OIL(C24-C40)		21541873	19873.41117	1000.000 CAL
Totals		99916097		4000.000 CAL



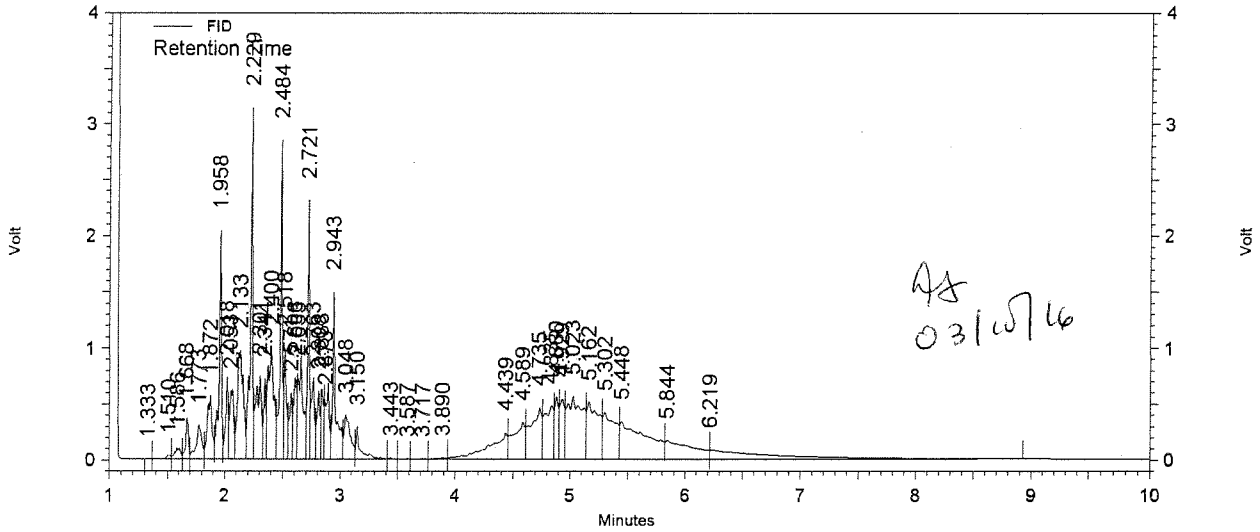
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09034.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DSD5C09013 JP5/5W30 1500/1500PPM**
Acquired	**: 03/09/16 22:34:08**
Printed	**: 03/10/16 11:10:48**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		48066274	32426.51678	1500.000 CAL
M.OIL(C18-C36)		36417990	22866.97517	1500.000 CAL
M.OIL(C24-C36)		31398078	19873.41117	1500.000 CAL
M.OIL(C24-C40)		31398078	19873.41117	1500.000 CAL
Totals		147280420		6000.000 CAL



Software Version: Version 3.3.1

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC09023A 03/09/2016 19:28
Conc Cont LFID & Datetime: LC09027A 03/09/2016 20:35
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	33338.6	14565026	436.88	-13		20
DIESEL(C10-C24)	NA	NA	NA	500.0	31896.9	13973002	438.07	-12		20
DIESEL(C10-C28)	NA	NA	NA	500.0	31933.8	14042544	439.74	-12		20
DIESEL(C10-C25)	NA	NA	NA	500.0	31927.8	14029949	439.43	-12		20
DIESEL(C9-C24)	NA	NA	NA	500.0	32831.0	14235734	433.61	-13		20
DIESEL(C9-C25)	NA	NA	NA	500.0	32861.9	14292681	434.93	-13		20
DIESEL(C10-C36)	NA	NA	NA	500.0	31934.0	14042544	439.74	-12		20
DIESEL(C10-C40)	NA	NA	NA	500.0	31934.0	14042544	439.74	-12		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
BROMOBENZENE	1.795	1.785	1.805	80.0	18960.7	1443865	76.15	-5		20
HEXACOSANE	4.963	4.769	5.157	20.0	26912.9	536090	19.92	-0		20

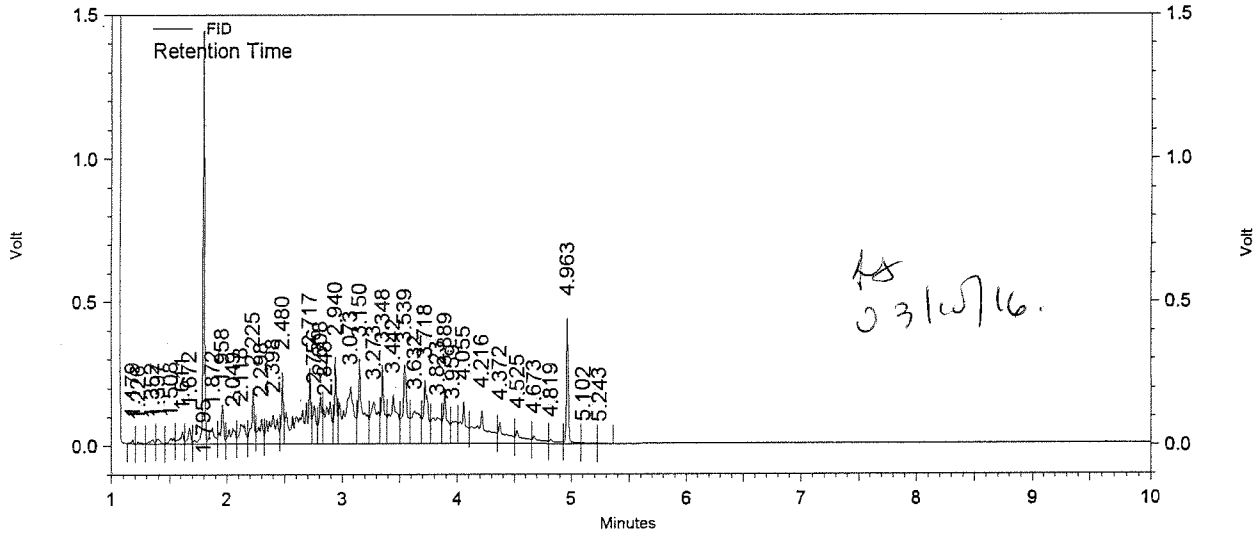
AK 03/10/16

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09027.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: IDSD5C09001 DSL 500/80/20PPM**
Acquired	**: 03/09/16 20:35:42**
Printed	**: 03/10/16 11:06:24**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.795	1443865	18960.74371	76.150
HEXACOSANE	4.963	536090	26912.93293	19.919
DIESEL(TOTAL)		14565026	33338.55952	436.882
DIESEL(C10-C24)		13973002	31896.87324	438.068
DIESEL(C10-C28)		14042544	31933.82919	439.739
DIESEL(C10-C25)		14029949	31927.78586	439.428
DIESEL(C9-C24)		14235734	32831.02281	433.606
DIESEL(C9-C25)		14292681	32861.93543	434.931
DIESEL(C10-C36)		14042544	31933.96090	439.737
DIESEL(C10-C40)		14042544	31933.96090	439.737
Totals		115203979		3598.198



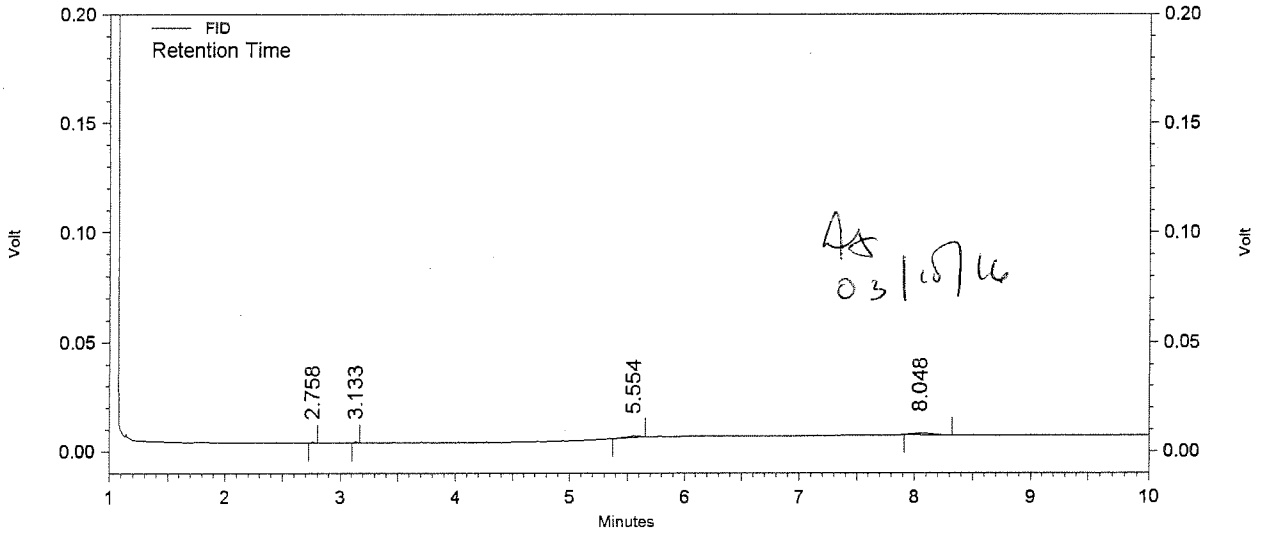
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09019.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: ICBD5C09001**
Acquired	**: 03/09/16 18:20:32**
Printed	**: 03/10/16 11:12:44**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE				0.000 BDL
HEXACOSANE				0.000 BDL
DIESEL(TOTAL)		15807	33338.55952	0.474
DIESEL(C10-C24)		1742	31896.87324	0.055
DIESEL(C10-C28)		1742	31933.82919	0.055
DIESEL(C10-C25)		1742	31927.78586	0.055
DIESEL(C9-C24)		1742	32831.02281	0.053
DIESEL(C9-C25)		1742	32861.93543	0.053
DIESEL(C10-C36)		6596	31933.96090	0.207
DIESEL(C10-C40)		15807	31933.96090	0.495
Totals		46920		1.445



Software Version: Version 3.3.1

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC09032A 03/09/2016 22:00
Conc Cont LFID & Datetime: LC09035A 03/09/2016 22:51
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	32426.5	14395327	443.94	-11		20
M.OIL(C18-C36)	NA	NA	NA	500.0	22867.0	11225173	490.89	-2		20
M.OIL(C24-C36)	NA	NA	NA	500.0	19873.4	9690242	487.60	-2		20
M.OIL(C24-C40)	NA	NA	NA	500.0	19873.4	9690242	487.60	-2		20

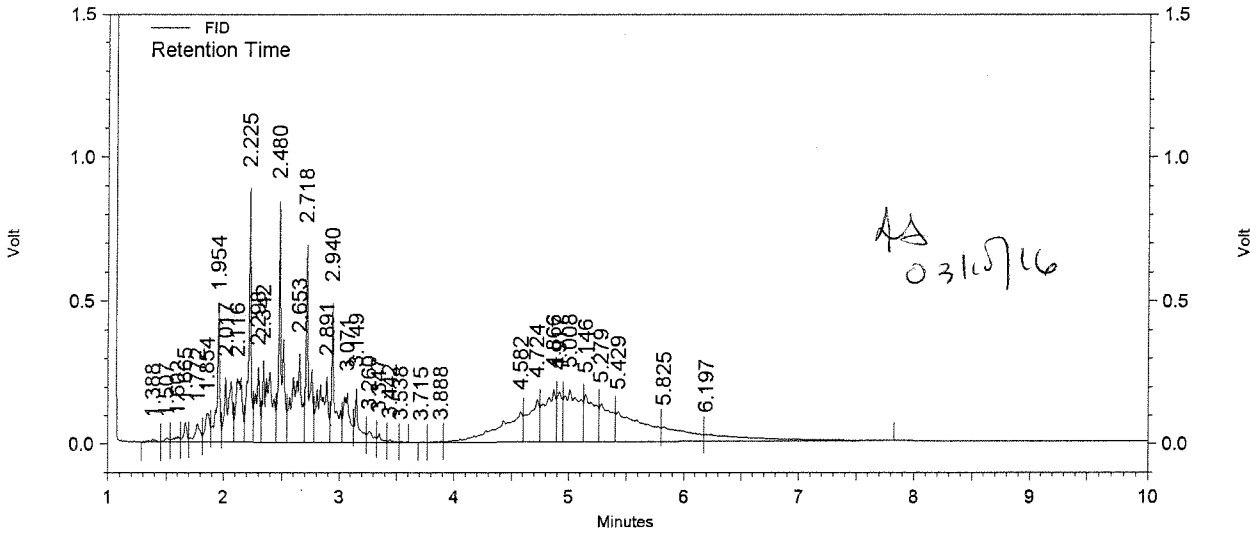
AA
03/15/16

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09035.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: IDSD5C09002 JP5/5W30 500/500PPM**
Acquired	**: 03/09/16 22:51:00**
Printed	**: 03/10/16 11:11:12**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		14395327	32426.51678	443.937
M.OIL(C18-C36)		11225173	22866.97517	490.890
M.OIL(C24-C36)		9690242	19873.41117	487.598
M.OIL(C24-C40)		9690242	19873.41117	487.598
Totals		45000984		1910.024



Software Version: Version 3.3.1

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC09032A 03/09/2016 22:00
Conc Cont LFID & Datetime: LC09036A 03/09/2016 23:07
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	32426.5	14891391	459.23	-8		20
M.OIL(C18-C36)	NA	NA	NA	500.0	22867.0	13139342	574.60	15		20
M.OIL(C24-C36)	NA	NA	NA	500.0	19873.4	8533637	429.40	-14		20
M.OIL(C24-C40)	NA	NA	NA	500.0	19873.4	8533637	429.40	-14		20

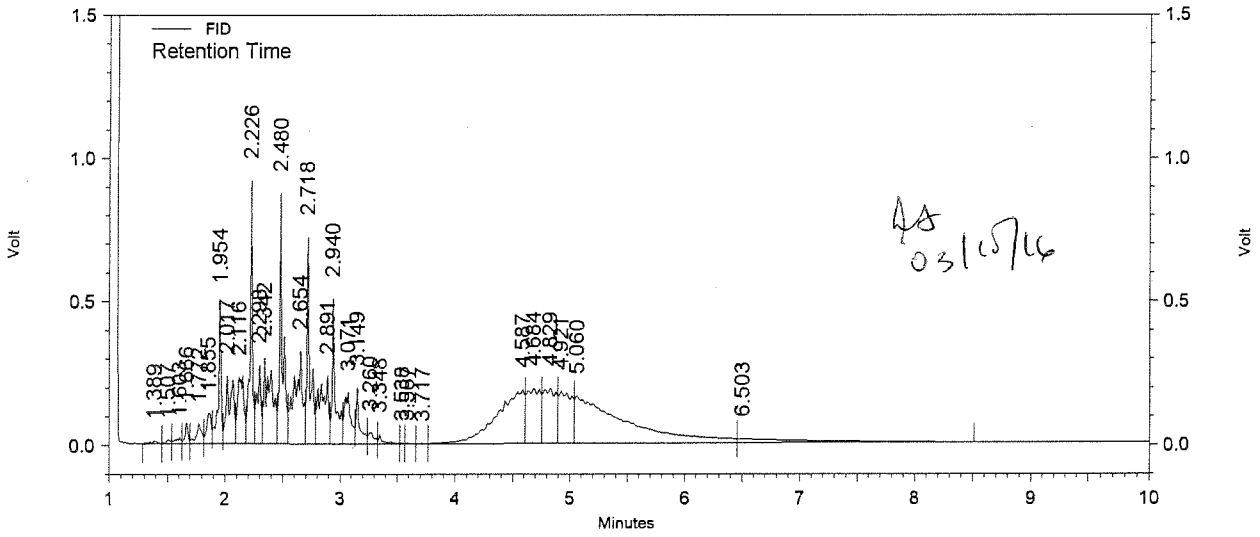
AS
03/09/16

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09036.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: IDSD5C09003 JP5/5W30 500/500PPM**
Acquired	**: 03/09/16 23:07:54**
Printed	**: 03/10/16 11:11:26**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		14891391	32426.51678	459.235
M.OIL(C18-C36)		13139342	22866.97517	574.599
M.OIL(C24-C36)		8533637	19873.41117	429.400
M.OIL(C24-C40)		8533637	19873.41117	429.400
Totals		45098007		1892.633



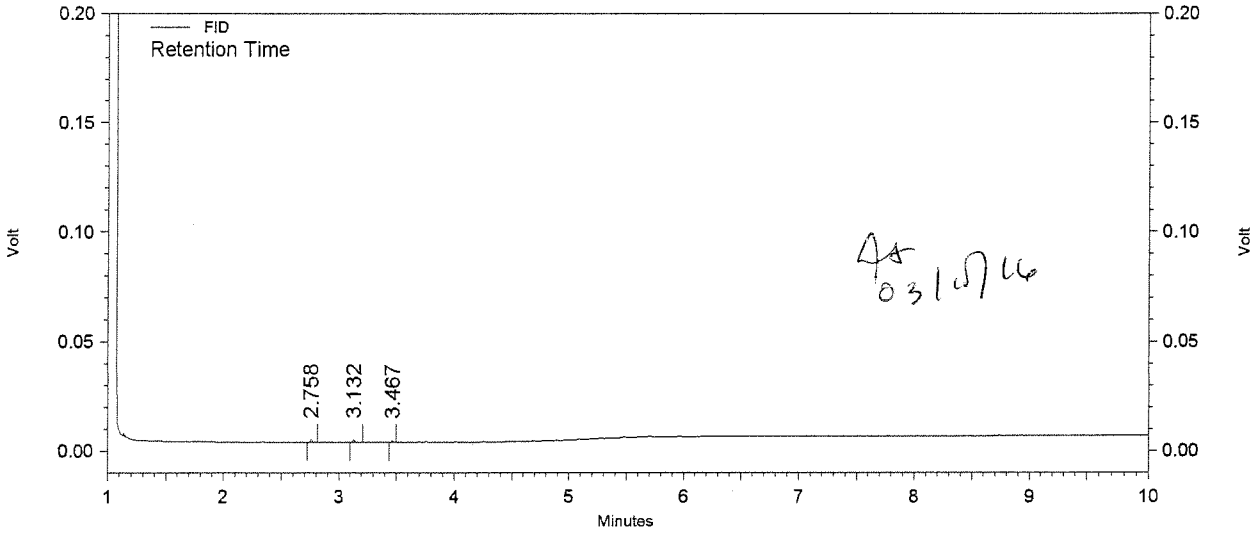
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LC09\LC09028.dat
Method : D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met
Sequence: : D:\Projects\EZC331\Sequence\LC09.seq
Sample ID : ICBD5C09002
Acquired : 03/09/16 20:52:32
Printed : 03/10/16 11:13:01
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE				0.000 BDL
HEXACOSANE				0.000 BDL
DIESEL(TOTAL)		3442	33338.55952	0.103
DIESEL(C10-C24)		3442	31896.87324	0.108
DIESEL(C10-C28)		3442	31933.82919	0.108
DIESEL(C10-C25)		3442	31927.78586	0.108
DIESEL(C9-C24)		3442	32831.02281	0.105
DIESEL(C9-C25)		3442	32861.93543	0.105
DIESEL(C10-C36)		3442	31933.96090	0.108
DIESEL(C10-C40)		3442	31933.96090	0.108
Totals		27536		0.852



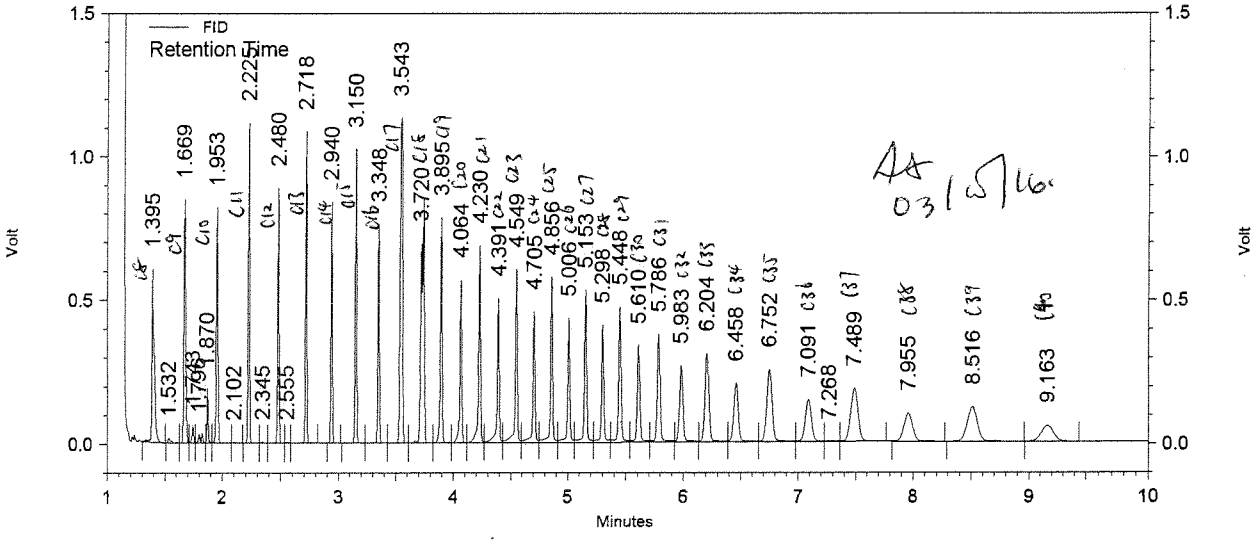
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LC09\LC09018.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LC09.seq**
Sample ID	**: DRO-01**
Acquired	**: 03/09/16 18:03:43**
Printed	**: 03/10/16 11:13:22**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.796	57002	18960.74371	3.006
HEXACOSANE	5.006	583995	26912.93293	21.699
DIESEL(TOTAL)		24910469	33338.55952	747.197
DIESEL(C10-C24)		12777020	31896.87324	400.573
DIESEL(C10-C28)		14868189	31933.82919	465.594
DIESEL(C10-C25)		14138675	31927.78586	442.833
DIESEL(C9-C24)		13953805	32831.02281	425.019
DIESEL(C9-C25)		15315460	32861.93543	466.055
DIESEL(C10-C36)		20776692	31933.96090	650.614
DIESEL(C10-C40)		22868549	31933.96090	716.120
Totals		140249856		4338.710



Software Version: Version 3.3.1

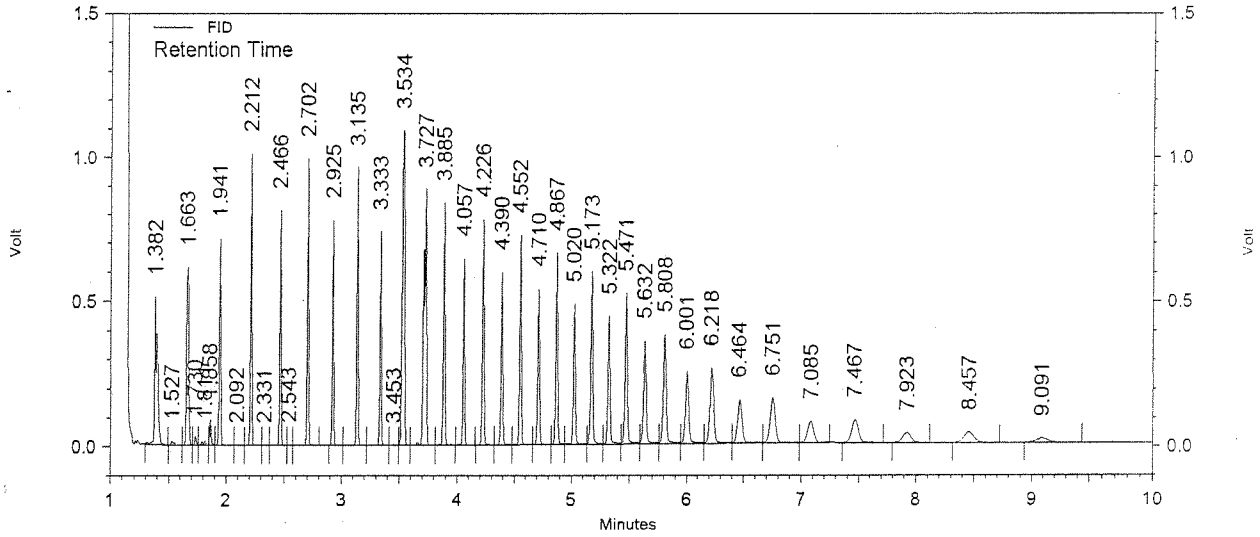
DAILY CALIBRATIONS

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	: D5
File	: D:\Projects\EZC331\Data\LD29\LD29003.dat
Method	: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met
Sequence:	: D:\Projects\EZC331\Sequence\LD29.seq
Sample ID	: DRO-01
Acquired	: 04/29/16 10:43:49
Printed	: 04/29/16 10:53:58
User	: CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE				0.000 BDL
HEXACOSANE	5.020	619579	26912.93293	23.022
DIESEL(TOTAL)		22116826	33338.55952	663.401
DIESEL(C10-C24)		11501260	31896.87324	360.576
DIESEL(C10-C28)		13685560	31933.82919	428.560
DIESEL(C10-C25)		12125950	31927.78586	379.793
DIESEL(C9-C24)		12318210	32831.02281	375.200
DIESEL(C9-C25)		12942900	32861.93543	393.857
DIESEL(C10-C36)		18716417	31933.96090	586.098
DIESEL(C10-C40)		19566478	31933.96090	612.717
Totals		123593180		3823.223



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: LC09024A 03/09/2016 19:44
Conc Cont LFID & Datetime: LD29035A 04/29/2016 19:44
CONC UNIT : ppm

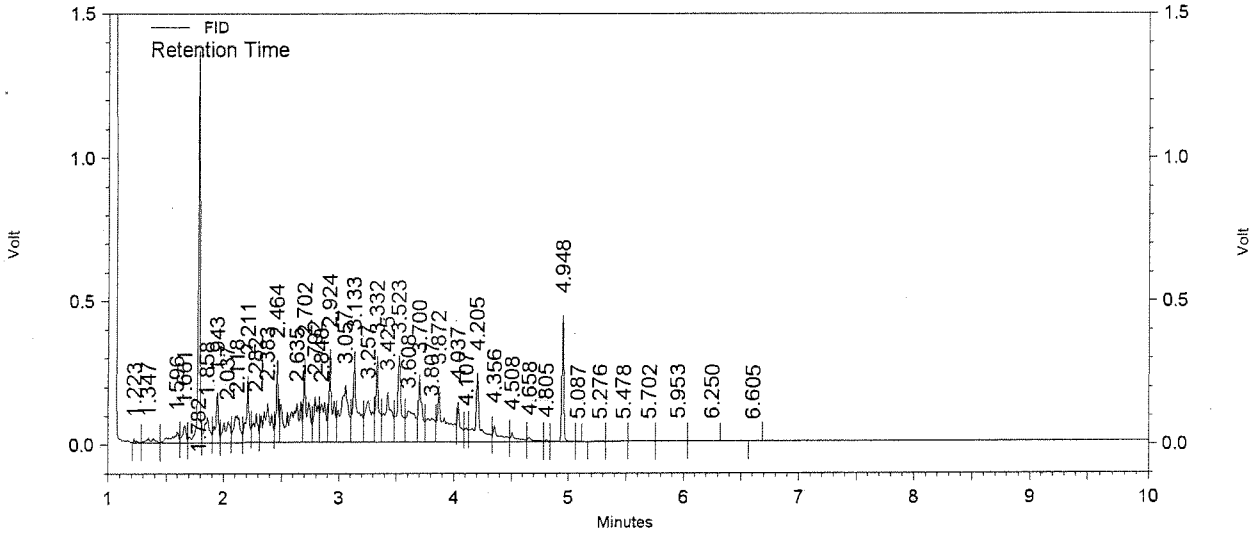
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	33338.6	14920989	447.56	-10		20
DIESEL(C10-C24)	NA	NA	NA	500.0	31896.9	13903640	435.89	-13		20
DIESEL(C10-C28)	NA	NA	NA	500.0	31933.8	13919264	435.88	-13		20
DIESEL(C10-C25)	NA	NA	NA	500.0	31927.8	13914141	435.80	-13		20
DIESEL(C9-C24)	NA	NA	NA	500.0	32831.0	14490599	441.37	-12		20
DIESEL(C9-C25)	NA	NA	NA	500.0	32861.9	14501100	441.27	-12		20
DIESEL(C10-C36)	NA	NA	NA	500.0	31934.0	13955798	437.02	-13		20
DIESEL(C10-C40)	NA	NA	NA	500.0	31934.0	13955798	437.02	-13		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
BROMOBENZENE	1.782	1.772	1.792	80.0	18960.7	1589419	83.83	5		20
HEXACOSANE	4.948	4.754	5.142	20.0	26912.9	527914	19.62	-2		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LD29\LD29035.dat
Method : D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met
Sequence: : D:\Projects\EZC331\Sequence\LD29.seq
Sample ID : CDSD5C091100 DSL 500/80/20PPM
Acquired : 04/29/16 19:44:21
Printed : 05/02/16 10:26:45
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.782	1589419	18960.74371	83.827
HEXACOSANE	4.948	527914	26912.93293	19.616
DIESEL(TOTAL)		14920989	33338.55952	447.559
DIESEL(C10-C24)		13903640	31896.87324	435.894
DIESEL(C10-C28)		13919264	31933.82919	435.878
DIESEL(C10-C25)		13914141	31927.78586	435.800
DIESEL(C9-C24)		14490599	32831.02281	441.369
DIESEL(C9-C25)		14501100	32861.93543	441.273
DIESEL(C10-C36)		13955798	31933.96090	437.021
DIESEL(C10-C40)		13955798	31933.96090	437.021
Totals		115678662		3615.258



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: LC09032A 03/09/2016 22:00
Conc Cont LFID & Datetime: LD29036A 04/29/2016 20:01
CONC UNIT : ppm

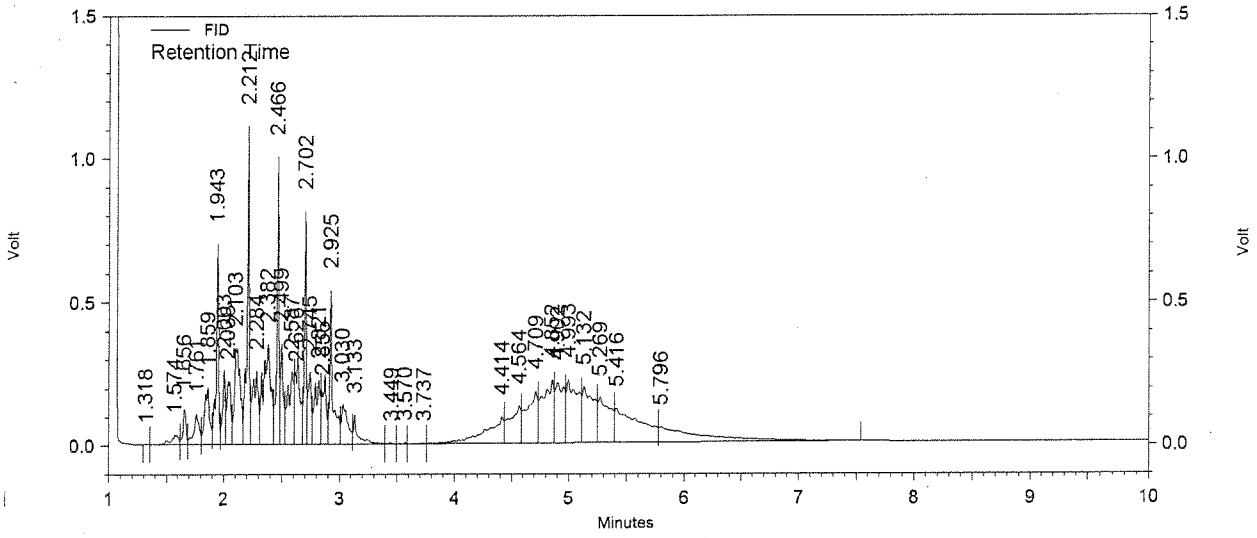
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	32426.5	16802520	518.17	4		20
M.OIL(C18-C36)	NA	NA	NA	500.0	22867.0	12805100	559.98	12		20
M.OIL(C24-C36)	NA	NA	NA	500.0	19873.4	10911303	549.04	10		20
M.OIL(C24-C40)	NA	NA	NA	500.0	19873.4	10911303	549.04	10		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29036.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: CDSD5C091101 JP5/MO 500/500PPM**
Acquired	**: 04/29/16 20:01:15**
Printed	**: 05/02/16 10:27:21**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		16802520	32426.51678	518.172
M.OIL(C18-C36)		12805100	22866.97517	559.982
M.OIL(C24-C36)		10911303	19873.41117	549.040
M.OIL(C24-C40)		10911303	19873.41117	549.040
Totals		51430226		2176.235



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: LC09024A 03/09/2016 19:44
Conc Cont LFID & Datetime: LD29043A 04/29/2016 22:00
CONC UNIT : ppm

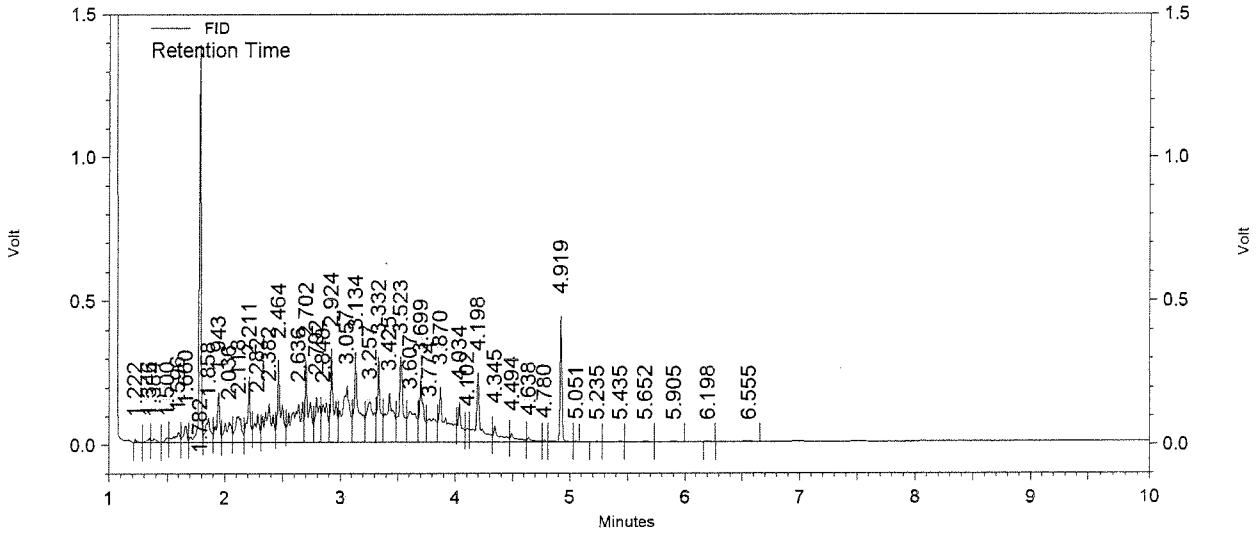
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	33338.6	14798897	443.90	-11		20
DIESEL(C10-C24)	NA	NA	NA	500.0	31896.9	13818874	433.24	-13		20
DIESEL(C10-C28)	NA	NA	NA	500.0	31933.8	13832968	433.18	-13		20
DIESEL(C10-C25)	NA	NA	NA	500.0	31927.8	13829456	433.15	-13		20
DIESEL(C9-C24)	NA	NA	NA	500.0	32831.0	14399109	438.58	-12		20
DIESEL(C9-C25)	NA	NA	NA	500.0	32861.9	14409691	438.49	-12		20
DIESEL(C10-C36)	NA	NA	NA	500.0	31934.0	13852160	433.77	-13		20
DIESEL(C10-C40)	NA	NA	NA	500.0	31934.0	13852160	433.77	-13		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
BROMOBENZENE	1.782	1.772	1.792	80.0	18960.7	1583315	83.50	4		20
HEXACOSANE	4.919	4.725	5.113	20.0	26912.9	512550	19.05	-5		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29043.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: CDSD5C091102 DSL 500/80/20PPM**
Acquired	**: 04/29/16 22:00:11**
Printed	**: 05/02/16 10:32:18**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.782	1583315	18960.74371	83.505
HEXACOSANE	4.919	512550	26912.93293	19.045
DIESEL(TOTAL)		14798897	33338.55952	443.897
DIESEL(C10-C24)		13818874	31896.87324	433.236
DIESEL(C10-C28)		13832968	31933.82919	433.176
DIESEL(C10-C25)		13829456	31927.78586	433.148
DIESEL(C9-C24)		14399109	32831.02281	438.582
DIESEL(C9-C25)		14409691	32861.93543	438.492
DIESEL(C10-C36)		13852160	31933.96090	433.775
DIESEL(C10-C40)		13852160	31933.96090	433.775
Totals		114889180		3590.632



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: LC09032A 03/09/2016 22:00
Conc Cont LFID & Datetime: LD29044A 04/29/2016 22:17
CONC UNIT : ppm

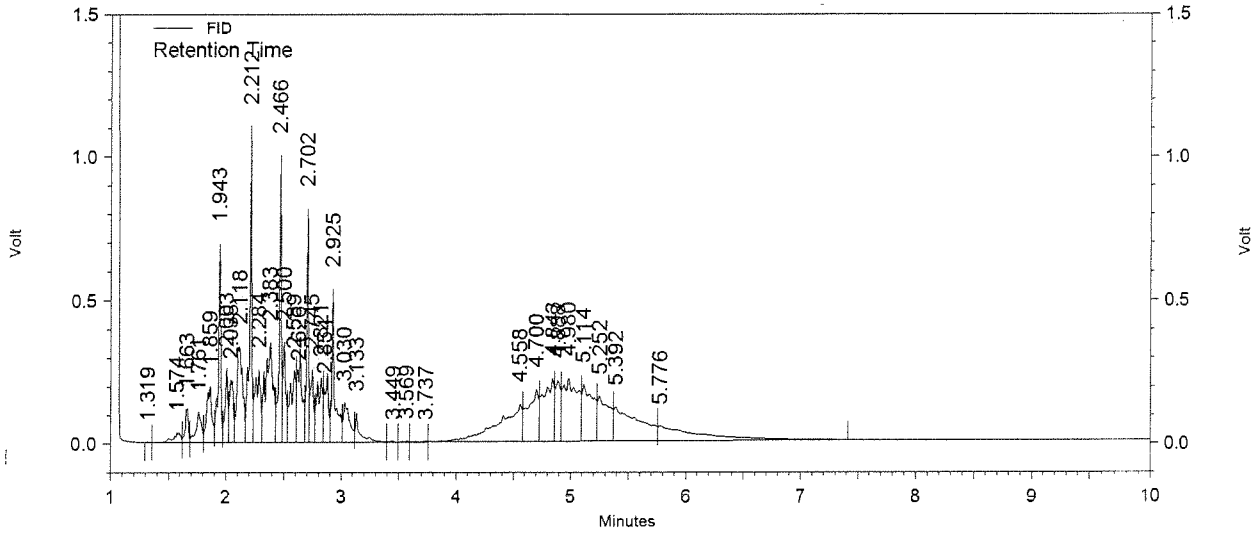
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	32426.5	16685101	514.55	3		20
M.OIL(C18-C36)	NA	NA	NA	500.0	22867.0	12558171	549.18	10		20
M.OIL(C24-C36)	NA	NA	NA	500.0	19873.4	9533753	479.72	-4		20
M.OIL(C24-C40)	NA	NA	NA	500.0	19873.4	9533753	479.72	-4		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: D5 (Offline)**
File	**: D:\Projects\EZC331\Data\LD29\LD29044.dat**
Method	**: D:\Projects\EZC331\Method\2016 METHODS\DSD5C09.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LD29.seq**
Sample ID	**: CDSD5C091103 JP5/MO 500/500PPM**
Acquired	**: 04/29/16 22:17:12**
Printed	**: 05/02/16 10:33:02**
User	**: CZhao**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		16685101	32426.51678	514.551
M.OIL(C18-C36)		12558171	22866.97517	549.184
M.OIL(C24-C36)		9533753	19873.41117	479.724
M.OIL(C24-C40)		9533753	19873.41117	479.724
Totals		48310778		2023.183



Software Version: Version 3.3.1

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

ICAL
(Diesel and JP5/Motor oil)
LC09017 - LC09036.esd

Book #:	AD5-035
Instrument No.:	D5
Analytical Sequence:	LC09
Method File:	DSD5C09
Analytical Batch:	~~CD505~~ CZ 3/9/16 XA

SOP #	Rev. #
☑ EMAX-8015D	6
☐ EMAX-AK102/AK103	3
☐ EMAX-	

STANDARDS ID	Conc (mg/L)
ICAL	
☑ Diesel SS3B-20-38-03	5-3000
☑ Motor Oil ☑ JP5 SS3B-20-39-02	10-1500
CH_2Cl_2 SS2/9 /SW1A-05-16-09	pure
DSL DCC/ICV SS3B-20-39-01	500/50/20
JP5/5W30 DCC/ICV1 SS3B-20-39-03	500/500
~~Alaska DCC~~ JP5/5W30 ICV2 CZ 3/9/16 SS3B-20-40-01	500/500
Arizona DCC	

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: CZ

Date: 3/9/16

D5 Method: DSD5C09.met Data: 330 [illegible]

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
17	Unknown	0	100	2	MeCl2	DSD5C09.met	LC09017.dat		
18	Unknown	0	98	2	DRO-01	DSD5C09.met	LC09018.dat		
19	Unknown	0	99	2	ICBD5C09001	DSD5C09.met	LC09019.dat		
20	Unknown	0	76	2	DSD5C09001 DSL 5PPM	DSD5C09.met	LC09020.dat		DSL ICAL
21	Unknown	0	77	2	DSD5C09002 DSL 10/20/5PPM	DSD5C09.met	LC09021.dat		
22	Unknown	0	78	2	DSD5C09003 DSL 50/40/10PPM	DSD5C09.met	LC09022.dat		
23	Unknown	0	79	2	DSD5C09004 DSL 100/60/15PPM	DSD5C09.met	LC09023.dat		
24	Unknown	0	80	2	DSD5C09005 DSL 500/80/20PPM	DSD5C09.met	LC09024.dat		
25	Unknown	0	81	2	DSD5C09006 DSL 1500/100/25PPM	DSD5C09.met	LC09025.dat		
26	Unknown	0	82	2	DSD5C09007 DSL 3000/220/55PPM	DSD5C09.met	LC09026.dat		
27	Unknown	0	83	2	IDSD5C09001 DSL 500/80/20PPM	DSD5C09.met	LC09027.dat		DSL ICV
28	Unknown	0	99	2	ICBD5C09002	DSD5C09.met	LC09028.dat		
29	Unknown	0	86	2	DSD5C09008 JP5/5W30 10/10PPM	DSD5C09.met	LC09029.dat		JP5/5W30 ICAL
30	Unknown	0	87	2	DSD5C09009 JP5/5W30 50/50PPM	DSD5C09.met	LC09030.dat		
31	Unknown	0	88	2	DSD5C09010 JP5/5W30 100/100PPM	DSD5C09.met	LC09031.dat		
32	Unknown	0	89	2	DSD5C09011 JP5/5W30 500/500PPM	DSD5C09.met	LC09032.dat		
33	Unknown	0	90	2	DSD5C09012 JP5/5W30 1000/1000PPM	DSD5C09.met	LC09033.dat		
34	Unknown	0	91	2	DSD5C09013 JP5/5W30 1500/1500PPM	DSD5C09.met	LC09034.dat		
35	Unknown	0	93	2	IDSD5C09002 JP5/5W30 500/500PPM	DSD5C09.met	LC09035.dat		ACCU/RESTEK LOT#7726 JP5/5W30
36	Unknown	0	92	2	IDSD5C09003 JP5/5W30 500/500PPM	DSD5C09.met	LC09036.dat		ACCU/ACCUSTD
37	Unknown	0		2	B	DSD5C09.met	LC09037.dat		
38	Unknown	0		2	B	DSD5C09.met	LC09038.dat		
39	Unknown	0		2	B	DSD5C09.met	LC09039.dat		
40	Unknown	0		2	B	DSD5C09.met	LC09040.dat		
41	Unknown	0		2	B	DSD5C09.met	LC09041.dat		
42	Unknown	0		2	B	DSD5C09.met	LC09042.dat		
43	Unknown	0		2	B	DSD5C09.met	LC09043.dat		
44	Unknown	0		2	B	DSD5C09.met	LC09044.dat		
45	Unknown	0		2	B	DSD5C09.met	LC09045.dat		
46	Unknown	0		2	B	DSD5C09.met	LC09046.dat		
47	Unknown	0		2	B	DSD5C09.met	LC09047.dat		
48	Unknown	0		2	B	DSD5C09.met	LC09048.dat		
49	Unknown	0		2	B	DSD5C09.met	LC09049.dat		
50	Unknown	0		2	B	DSD5C09.met	LC09050.dat		
51	Unknown	0		2	B	DSD5C09.met	LC09051.dat		
52	Unknown	0		2	B	DSD5C09.met	LC09052.dat		
53	Unknown	0		2	B	DSD5C09.met	LC09053.dat		
54	Unknown	0		2	B	DSD5C09.met	LC09054.dat		
55	Unknown	0		2	B	DSD5C09.met	LC09055.dat		
56	Unknown	0		2	B	DSD5C09.met	LC09056.dat		
57	Unknown	0		2	B	DSD5C09.met	LC09057.dat		
58	Unknown	0		2	B	DSD5C09.met	LC09058.dat		
59	Unknown	0		2	B	DSD5C09.met	LC09059.dat		
60	Unknown	0		2	B	DSD5C09.met	LC09060.dat		
61	Unknown	0		2	B	DSD5C09.met	LC09061.dat		
62	Unknown	0		2	B	DSD5C09.met	LC09062.dat		
63	Unknown	0		2	B	DSD5C09.met	LC09063.dat		
64	Unknown	0		2	B	DSD5C09.met	LC09064.dat		
65	Unknown	0		2	B	DSD5C09.met	LC09065.dat		
66	Unknown	0		2	B	DSD5C09.met	LC09066.dat		
67	Unknown	0		2	B	DSD5C09.met	LC09067.dat		
68	Unknown	0		2	B	DSD5C09.met	LC09068.dat		
69	Unknown	0		2	B	DSD5C09.met	LC09069.dat		
70	Unknown	0		2	B	DSD5C09.met	LC09070.dat		

CZ 3/10/16

FINAL

For Help, press F1

Start | EZChrom Elite | D5 Method: DSD5... | D5 (Offline) Method... | D:\Projects\EZC331\Ex... | D:\Projects\EZC331\Da... | untitled - Paint | Calculator | Thursday, March 10, 2016 09:36

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EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

160169-10 re-analysis at 10x
160627-01, 01M, 01S, 02 re-analysis at 2x
160627-03 re-analysis at 10x
160627-04 re-analysis at 50x
DSD036W 160177
DSD037W (DS2/SW30) 160201
DSD038S (HF) LOD-11 (HF)
LOD-11 (HF)
160121 (HF)
Re-analysis 160121 due to no surrogate ~~[illegible]~~ DCC

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
☐

Book #:	AD5-036
Instrument No.:	D5
Analytical Sequence:	29
Method File:	DSD5109, HFD5D15
Analytical Batch:	CDSD5109109, CHFD5D15

SOP #	Rev. #
☑ EMAX-8015D	6
☐ EMAX-AK102/AK103	3
☐ EMAX-	

STANDARDS ID	Conc (mg/L)
ICAL	
☐ Diesel	
☐ Motor Oil ☐ JP5	
CH_2Cl_2 55219	pure
DSL DCC SSB-20-26-02	500/80/20
JP5/5W30 DCC SSB-20-34-01	500/500
Alaska DCC	
Arizona DCC	
Hydraulic Fluid DCC SSB-20-45-02	500

ELECTRONIC DATA ARCHIVAL	
Location	Date
☑ EZCHROM_GC6890N	4/29/16
☑ External Hard Drive	4/29/16

Analyzed By: CR

Date: 4/29/16

File Edit View Method Data Sequence Analysis Control Reports Window Help

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Method
Sequence
Reports
Control
Views

Run #	Run Type	Vial	Volume	Sample ID	Method	Filename	Action	Description
1	Unknown	100	2	MECL2	DSD5C09.met	LD29001.dat		
2	Unknown	99	2	IBD5LD29001	DSD5C09.met	LD29002.dat		
3	Unknown	98	2	DRO-01	DSD5C09.met	LD29003.dat		
4	Unknown	96	2	TEST	DSD5C09.met	LD29004.dat		
5	Unknown	96	2	CDSD5C091094 DSL 500/80/20PPM	DSD5C09.met	LD29005.dat		
6	Unknown	97	2	CDSD5C091095 JP5/MO 500/500PPM	DSD5C09.met	LD29006.dat		
7	Unknown	1	2	16D169-10I 0.1/1.0ML	DSD5C09.met	LD29007.dat		
8	Unknown	2	2	16D627-01I 0.5/1.0ML	DSD5C09.met	LD29008.dat		Yellowish
9	Unknown	3	2	16D627-01IM 0.5/1.0ML	DSD5C09.met	LD29009.dat		Yellowish
10	Unknown	4	2	16D627-01IS 0.5/1.0ML	DSD5C09.met	LD29010.dat		Yellowish
11	Unknown	5	2	16D627-02I 0.5/1.0ML	DSD5C09.met	LD29011.dat		
12	Unknown	6	2	16D627-03I 0.1/1.0ML	DSD5C09.met	LD29012.dat		
13	Unknown	7	2	16D627-04I 0.02/1.0ML	DSD5C09.met	LD29013.dat		
14	Unknown	96	2	CDSD5C091096 DSL 500/80/20PPM	DSD5C09.met	LD29014.dat		
15	Unknown	97	2	CDSD5C091097 JP5/MO 500/500PPM	DSD5C09.met	LD29015.dat		
16	Unknown	8	2	DSD036WB	DSD5C09.met	LD29016.dat		
17	Unknown	9	2	DSD036WL	DSD5C09.met	LD29017.dat		
18	Unknown	10	2	DSD036WC	DSD5C09.met	LD29018.dat		
19	Unknown	11	2	16D177-02	DSD5C09.met	LD29019.dat		Yellowish
20	Unknown	12	2	16D177-02M	DSD5C09.met	LD29020.dat		Yellowish
21	Unknown	13	2	16D177-02S	DSD5C09.met	LD29021.dat		Yellowish
22	Unknown	14	2	16D177-03	DSD5C09.met	LD29022.dat		Yellowish
23	Unknown	15	2	16D177-04	DSD5C09.met	LD29023.dat		Yellowish
24	Unknown	16	2	16D177-05	DSD5C09.met	LD29024.dat		Yellowish
25	Unknown	17	2	16D177-06	DSD5C09.met	LD29025.dat		Yellowish
26	Unknown	96	2	CDSD5C091098 DSL 500/80/20PPM	DSD5C09.met	LD29026.dat		
27	Unknown	97	2	CDSD5C091099 JP5/MO 500/500PPM	DSD5C09.met	LD29027.dat		
28	Unknown	18	2	16D177-07	DSD5C09.met	LD29028.dat		Yellowish
29	Unknown	19	2	16D177-08	DSD5C09.met	LD29029.dat		
30	Unknown	20	2	16D177-09	DSD5C09.met	LD29030.dat		Yellowish
31	Unknown	21	2	16D177-10	DSD5C09.met	LD29031.dat		Yellowish
32	Unknown	22	2	16D177-11	DSD5C09.met	LD29032.dat		Yellowish
33	Unknown	23	2	16D177-12	DSD5C09.met	LD29033.dat		
34	Unknown	99	2	IBD5LD29002	DSD5C09.met	LD29034.dat		
35	Unknown	96	2	CDSD5C091100 DSL 500/80/20PPM	DSD5C09.met	LD29035.dat		
36	Unknown	97	2	CDSD5C091101 JP5/MO 500/500PPM	DSD5C09.met	LD29036.dat		
37	Unknown	24	2	DSD037SB	DSD5C09.met	LD29037.dat		
38	Unknown	25	2	DSD037SL DSL	DSD5C09.met	LD29038.dat		
39	Unknown	26	2	DSD037SC DSL	DSD5C09.met	LD29039.dat		
40	Unknown	27	2	DSD037SX 5W30	DSD5C09.met	LD29040.dat		
41	Unknown	28	2	DSD037SY 5W30	DSD5C09.met	LD29041.dat		
42	Unknown	29	2	16D201-01	DSD5C09.met	LD29042.dat		
43	Unknown	96	2	CDSD5C091102 DSL 500/80/20PPM	DSD5C09.met	LD29043.dat		
44	Unknown	97	2	CDSD5C091103 JP5/MO 500/500PPM	DSD5C09.met	LD29044.dat		
45	Unknown	99	2	IBD5LD29003	HFD5D15.met	LD29045.dat		
46	Unknown	98	2	DRO-02	HFD5D15.met	LD29046.dat		
47	Unknown	94	2	CHFD5D151104 HF 500PPM	HFD5D15.met	LD29047.dat		
48	Unknown	30	2	DSD038SB	HFD5D15.met	LD29048.dat		
49	Unknown	31	2	DSD038SL	HFD5D15.met	LD29049.dat		
50	Unknown	32	2	DSD038SC	HFD5D15.met	LD29050.dat		
51	Unknown	33	2	DSD038SX	HFD5D15.met	LD29051.dat		
52	Unknown	34	2	DSD038SY	HFD5D15.met	LD29052.dat		
53	Unknown	35	2	LOD-11 HF	HFD5D15.met	LD29053.dat		
54	Unknown	36	2	LOD-11 HF	HFD5D15.met	LD29054.dat		

FINAL

CZ 4/29/16

For Help, press F1

Friday, April 29, 2016

File Edit View Method Data Sequence Analysis Control Reports Window Help

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  - Manual Integration

Method | Sequence | Reports | Control | Views

Run #	Run Type	Vial	Volume	Sample ID	Method	Filename	Action	Description
54	Unknown	36	2	LOQ-11 HF	HFD5D15.met	LD29054.dat		
55	Unknown	37	2	16D121-01	HFD5D15.met	LD29055.dat		Yellowish
56	Unknown	94	2	CHFD5D151105 HF 500PPM	HFD5D15.met	LD29056.dat		
57	Unknown		2	B	HFD5D15.met	LD29057.dat		
58	Unknown		2	B	HFD5D15.met	LD29058.dat		
59	Unknown		2	B	HFD5D15.met	LD29059.dat		
60	Unknown		2	B	HFD5D15.met	LD29060.dat		
61	Unknown		2	B	HFD5D15.met	LD29061.dat		
62	Unknown		2	B	HFD5D15.met	LD29062.dat		
63	Unknown		2	B	HFD5D15.met	LD29063.dat		
64	Unknown		2	B	HFD5D15.met	LD29064.dat		
65	Unknown		2	B	HFD5D15.met	LD29065.dat		
66	Unknown		2	B	HFD5D15.met	LD29066.dat		
67	Unknown		2	B	HFD5D15.met	LD29067.dat		
68	Unknown		2	B	HFD5D15.met	LD29068.dat		
69	Unknown		2	B	HFD5D15.met	LD29069.dat		
70	Unknown		2	B	HFD5D15.met	LD29070.dat		
71	Unknown		2	B	HFD5D15.met	LD29071.dat		
72	Unknown		2	B	HFD5D15.met	LD29072.dat		
73	Unknown		2	B	HFD5D15.met	LD29073.dat		
74	Unknown		2	B	HFD5D15.met	LD29074.dat		
75	Unknown		2	B	HFD5D15.met	LD29075.dat		
76	Unknown		2	B	HFD5D15.met	LD29076.dat		
77	Unknown		2	B	HFD5D15.met	LD29077.dat		
78	Unknown		2	B	HFD5D15.met	LD29078.dat		
79	Unknown		2	B	HFD5D15.met	LD29079.dat		
80	Unknown		2	B	HFD5D15.met	LD29080.dat		
81	Unknown		2	B	HFD5D15.met	LD29081.dat		
82	Unknown		2	B	HFD5D15.met	LD29082.dat		
83	Unknown		2	B	HFD5D15.met	LD29083.dat		
84	Unknown		2	B	HFD5D15.met	LD29084.dat		
85	Unknown		2	B	HFD5D15.met	LD29085.dat		
86	Unknown		2	B	HFD5D15.met	LD29086.dat		
87	Unknown		2	B	HFD5D15.met	LD29087.dat		
88	Unknown		2	B	HFD5D15.met	LD29088.dat		
89	Unknown		2	B	HFD5D15.met	LD29089.dat		
90	Unknown		2	B	HFD5D15.met	LD29090.dat		
91	Unknown		2	B	HFD5D15.met	LD29091.dat		
92	Unknown		2	B	HFD5D15.met	LD29092.dat		
93	Unknown		2	B	HFD5D15.met	LD29093.dat		
94	Unknown		2	B	HFD5D15.met	LD29094.dat		
95	Unknown		2	B	HFD5D15.met	LD29095.dat		
96	Unknown		2	B	HFD5D15.met	LD29096.dat		
97	Unknown		2	B	HFD5D15.met	LD29097.dat		
98	Unknown		2	B	HFD5D15.met	LD29098.dat		
99	Unknown		2	B	HFD5D15.met	LD29099.dat		
100	Unknown		2	B	HFD5D15.met	LD29100.dat		
101	Unknown		2	B	HFD5D15.met	LD29101.dat		
102	Unknown		2	B	HFD5D15.met	LD29102.dat		
103	Unknown		2	B	HFD5D15.met	LD29103.dat		
104	Unknown		2	B	HFD5D15.met	LD29104.dat		
105	Unknown		2	B	HFD5D15.met	LD29105.dat		
106	Unknown		2	B	HFD5D15.met	LD29106.dat		
107	Unknown		2	B	HFD5D15.met	LD29107.dat		

FINAL

02 4/29/16

For Help, press F1

Friday, April 29, 2016

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-AKSGC	0

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Book #: EDS-076
Preparation Batch: DSD034S
Matrix: Soil
Micropipette ID: PE00-03 (1000 µL)
Micropipette ID: PE97C-03 (100 µL)

Standards	ID	Amount Added (ml)
Surrogate		
Surrogate	SS3-009-10-22	0.5
LCS/MS (diesel)*	SS3-009-10-20	0.10
5000 ppm LCS/MS (5W30)*	SS3B-20-31-01	1.0
Reagent	**Lot # / ID**	
CH_2Cl_2	53219	
Na_2SO_4	SW1B-003-10-13	
HCl	–	
Silica Sand	SW1B-002-09-25	
Silica Gel	–	
Reagent Water	–	
pH strip	–	
Filter Paper	9692235B	

TUNING	
Sonicator #	Reading
4	50%
6	50%

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3	35	35
4		
5		
6		

Lab Sample ID	Sonicator #	Concentrator #
DSD034→SB	4	3
-SL*	6	3
-SC*	6	3
-SX*	6	3
-SY*	6	3
D201→01	4	3

Comments:

Test thermometer = SVOC-T1

Prepared By: Jville
Standard Added By: Jville
Witnessed By: JM
Checked By: JM
Extract Received By: Cz 4/21/16
Extraction Location: SE06 # 07
Disposal Date:
Disposed By:

FileID: DSD037S

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR EXTRACTABLE TPH

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16DSD037S01	DSD037SB	10	g	4/29/16 13:11	10	10	10	1	
16DSD037S02	DSD037SL	10	g	4/29/16 13:11	10	10	10	1	diesel
16DSD037S03	DSD037SC	10	g	4/29/16 13:11	10	10	10	1	diesel
16DSD037S04	DSD037SX	10	g	4/29/16 13:12	10	10	10	1	5W30
16DSD037S05	DSD037SY	10	g	4/29/16 13:12	10	10	10	1	5W30
16DSD037S06	D201-01	10.03	g	4/29/16 13:14	10	10	10	1	

Balance ID: 10304418. Calibration check was verified prior to use.

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 4/29/16 14:40

Prepared By: JVille

☑ Extraction Ended @ 4/29/16 16:30

Checked By: JM

Comments:

Date 4/29/16

SOP EMAX-3550 Rev. 4

URS Corporation
12120 Shamrock Plaza, Suite 100, Omaha, NE 68154 (402) 334-8181 Fax (402) 334-1984

CHAIN OF CUSTODY RECORD

16E133

Project Name: Cannon AFB PBR
Project No.: 60425210
Project Location: CAFB, NM
Project Manager: Mike Sonderman
Sampler(s): K. Klocwer, J. Carritt

	Sample Date	Sample Time	Type Comp.	Type Grab	Sample Identification	Matrix	Containers No.	Containers Type	TCLIP Water	TCLIP Soil	TPH-GRO 8015C	TPH-DRO/ORO 8015C	VOCs 8260B					Preservative / Remarks
1	5/13/16	0745	X*	X	TB-05132016	AQ	2	40mL VOAs					X					HCL
2	5/13/16	0830	X		CAFB-IDW-W-05132016	AQ	See special Instructions		X									
3	5/13/16	0800	X		CAFB-IDW-S-05132016	Soil	See special Instructions			X	X	X						(2) 40mL VOA, MEOH=GRO
4	5/13/16	0945		X	CA015-0341A-000.5	Soil	1	4oz Glass jar				X						
4B 5/16/16	5/13/16	0945		X	CA015-0341A-000.5	Soil	2	40mL VOA			X							MeOH

Signatures	Date	Time	Shipping Details	Special Instructions
Relinquished by: [signature]	5/13/16	1030	Method of Shipment: FEDEX	TCLIP Water = 8260B, 8270D, 8081B, 8151A, 6020A, 7470A, (3) 40mL VOA, HCL / (5) 1 Liter Amber NONE PRESER, (2) 250mL HDPE, HNO3
Received by:			Airbill No.: –	
Relinquished by:			Lab Address: EMAX Laboratories 1835 West 205th Street Torrance, CA 90501	TCLIP Soil = 8260B, 8270D, 8081B, 8151A, 6010C, 7470A, 9095B, (2) 8oz Glass jars
Received for Laboratory by: [signature]	5/14/16	11:32		

P Drive/Office Administration/Chain of Custody Form (Nov 2012) White copy - Laboratory Yellow copy - Laboratory Pink copy - URS

Temp = 1.7°C 130380

RESULTS SUMMARIES

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/19/16 16:16
Sample ID:	TB-05132016	Date Analyzed:	05/19/16 16:16
Lab Samp ID:	E133-01	Dilution Factor:	1
Lab File ID:	REW377	Matrix :	WATER
Ext Btch ID:	VO06E16	% Moisture :	NA
Calib. Ref.:	RCW159	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
CARBON TETRACHLORIDE	ND	1.0	0.10	0.20
CHLOROBENZENE	ND	1.0	0.10	0.20
CHLOROFORM	ND	1.0	0.10	0.20
1,4-DICHLOROBENZENE	ND	1.0	0.10	0.20
1,2-DICHLOROETHANE	ND	1.0	0.10	0.20
1,1-DICHLOROETHENE	ND	1.0	0.10	0.20
TETRACHLOROETHENE	ND	1.0	0.15	0.20
TRICHLOROETHENE	ND	1.0	0.10	0.20
VINYL CHLORIDE	ND	1.0	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	10.0	10.00	100	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/20/16 14:03
Sample ID:	CAFB-IDW-W-05132016	Date Analyzed:	05/20/16 14:03
Lab Samp ID:	E133-02	Dilution Factor:	10
Lab File ID:	REW407	Matrix :	WATER
Ext Btch ID:	VO06E17	% Moisture :	NA
Calib. Ref.:	RCW159	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	10	1.0	2.0
2-BUTANONE	ND	100	20	40
CARBON TETRACHLORIDE	ND	10	1.0	2.0
CHLOROBENZENE	ND	10	1.0	2.0
CHLOROFORM	ND	10	1.0	2.0
1,4-DICHLOROBENZENE	ND	10	1.0	2.0
1,2-DICHLOROETHANE	ND	10	1.0	2.0
1,1-DICHLOROETHENE	ND	10	1.0	2.0
TETRACHLOROETHENE	ND	10	1.5	2.0
TRICHLOROETHENE	ND	10	1.0	2.0
VINYL CHLORIDE	ND	10	1.2	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	100.0	108	70-120
4-BROMOFLUOROBENZENE	103	100.0	103	75-120
TOLUENE-D8	104	100.0	104	85-120
DIBROMOFLUOROMETHANE	94.7	100.0	94.7	85-115

METHOD SW1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/26/16 12:31
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/26/16 12:31
Lab Samp ID:	E133-03	Dilution Factor:	10
Lab File ID:	REN144	Matrix :	LEACHATE
Ext Btch ID:	VSF4E08	% Moisture :	NA
Calib. Ref.:	RCN007	Instrument ID :	TOF4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	50	5.0	10
2-BUTANONE	ND	100	25	50
CARBON TETRACHLORIDE	ND	50	5.4	10
CHLOROBENZENE	ND	50	5.0	10
CHLOROFORM	ND	50	5.0	10
1,4-DICHLOROBENZENE	ND	50	5.0	10
1,2-DICHLOROETHANE	ND	50	5.0	10
1,1-DICHLOROETHENE	ND	50	5.0	10
TETRACHLOROETHENE	ND	50	5.0	10
TRICHLOROETHENE	ND	50	5.0	10
VINYL CHLORIDE	ND	50	6.1	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	454	500.0	90.8	70-120
4-BROMOFLUOROBENZENE	456	500.0	91.1	75-120
TOLUENE-D8	488	500.0	97.6	85-120
DIBROMOFLUOROMETHANE	500	500.0	100	85-115

DateTime Leached: 05/24/16 15:30

METHOD SW3520C/8270D
SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/18/16 15:14
Sample ID:	CAFB-IDW-W-05132016	Date Analyzed:	05/23/16 17:47
Lab Samp ID:	E133-02	Dilution Factor:	5
Lab File ID:	REJ350	Matrix :	WATER
Ext Btch ID:	SVE025W	% Moisture :	NA
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	50	12	25
2,4,6-TRICHLOROPHENOL	ND	50	12	25
2,4-DINITROTOLUENE	ND	50	12	25
2-METHYLPHENOL	ND	50	12	25
4-METHYLPHENOL (1)	ND	50	12	25
HEXACHLOROBENZENE	ND	50	12	25
HEXACHLOROBUTADIENE	ND	50	12	25
HEXACHLOROETHANE	ND	50	12	25
NITROBENZENE	ND	50	12	25
PENTACHLOROPHENOL	ND	100	12	25
PYRIDINE	ND	200	57	100

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	142	150.0	94.7	40-125
2-FLUOROBIPHENYL	30.2	50.00	60.4	50-110
2-FLUOROPHENOL	73.3	150.0	48.9	20-110
NITROBENZENE-D5	30.3	50.00	60.6	40-110
PHENOL-D5	98.5	150.0	65.7	10-115
TERPHENYL-D14	22.3	50.00	44.6*	50-135

(1): 4-Methylphenol cannot be separated from 3-Methylphenol

METHOD SW1311/3520C/8270D
TCLP SEMI VOLATILE ORGANICS BY GC/MS

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/23/16 12:45
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/25/16 14:39
Lab Samp ID:	E133-03	Dilution Factor:	10
Lab File ID:	REJ393	Matrix :	LEACHATE
Ext Btch ID:	SVE030W	% Moisture :	4.0
Calib. Ref.:	RBJ007	Instrument ID :	T-OE4

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4,5-TRICHLOROPHENOL	ND	100	25	50
2,4,6-TRICHLOROPHENOL	ND	100	25	50
2,4-DINITROTOLUENE	ND	100	25	50
2-METHYLPHENOL	ND	100	25	50
4-METHYLPHENOL (1)	ND	100	25	50
HEXACHLOROBENZENE	ND	100	25	50
HEXACHLOROBUTADIENE	ND	100	25	50
HEXACHLOROETHANE	ND	100	25	50
NITROBENZENE	ND	100	25	50
PENTACHLOROPHENOL	ND	200	25	50
PYRIDINE	ND	400	110	200

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	348	600.0	58.1	40-125
2-FLUOROBIPHENYL	117	200.0	58.5	50-110
2-FLUOROPHENOL	281	600.0	46.9	20-110
NITROBENZENE-D5	114	200.0	57.0	40-110
PHENOL-D5	332	600.0	55.3	10-115
TERPHENYL-D14	144	200.0	72.0	50-135

(1): Cannot be separated from 3-Methylphenol
DateTime Leached: 05/20/16 18:30

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/18/16 11:04
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/18/16 11:04
Lab Samp ID:	E133-03N	Dilution Factor:	1.02
Lab File ID:	UE17025A	Matrix :	SOIL
Ext Btch ID:	GPE008S	% Moisture :	4.0
Calib. Ref.:	UE17013A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	0.30J	1.1	0.27	0.53

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	1.47	2.125	69.4	67-134

Parameter	H-C Range
GRO	C6-C10

METHOD SW5035A/8015C
GASOLINE RANGE ORGANICS BY PURGE AND TRAP

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/17/16 21:10
Sample ID:	CA015-0341A-000.5	Date Analyzed:	05/17/16 21:10
Lab Samp ID:	E133-04	Dilution Factor:	0.88
Lab File ID:	UE17009A	Matrix :	SOIL
Ext Btch ID:	GPE008S	% Moisture :	6.1
Calib. Ref.:	UE17003A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	0.77J	0.94	0.23	0.47

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	1.51	1.874	80.6	67-134

Parameter	H-C Range
GRO	C6-C10

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/20/16 18:00
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/23/16 14:03
Lab Samp ID:	E133-03	Dilution Factor:	1
Lab File ID:	LE23013A	Matrix :	SOIL
Ext Btch ID:	DSE021S	% Moisture :	4.0
Calib. Ref.:	LE23007A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.6	5.2

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	93.9	104.2	90.1	60-130
HEXACOSANE	31.8	26.04	122	60-130

Parameter	H-C Range
DRO	C10-C24

METHOD SW3550B/8015C
DIESEL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/20/16 18:00
Sample ID:	CA015-0341A-000.5	Date Analyzed:	05/23/16 15:27
Lab Samp ID:	E133-04	Dilution Factor:	1
Lab File ID:	LE23018A	Matrix :	SOIL
Ext Btch ID:	DSE021S	% Moisture :	6.1
Calib. Ref.:	LE23007A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	10J	11	2.7	5.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	86.3	106.5	81.1	60-130
HEXACOSANE	29.9	26.62	112	60-130

Parameter	H-C Range
DRO	C10-C24

METHOD SW3550B/8015C
OIL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/20/16 18:00
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/23/16 14:03
Lab Samp ID:	E133-03	Dilution Factor:	1
Lab File ID:	LE23013A	Matrix :	SOIL
Ext Btch ID:	DSE021S	% Moisture :	4.0
Calib. Ref.:	LE23007A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
ORO	ND	21	2.6	5.2

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	93.9	104.2	90.1	60-130
HEXACOSANE	31.8	26.04	122	60-130

Parameter	H-C Range
ORO	C24-C36

METHOD SW3550B/8015C
OIL RANGE ORGANICS BY EXTRACTION

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/20/16 18:00
Sample ID:	CA015-0341A-000.5	Date Analyzed:	05/23/16 15:27
Lab Samp ID:	E133-04	Dilution Factor:	1
Lab File ID:	LE23018A	Matrix :	SOIL
Ext Btch ID:	DSE021S	% Moisture :	6.1
Calib. Ref.:	LE23007A	Instrument ID :	D5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
ORO	100	21	2.7	5.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	86.3	106.5	81.1	60-130
HEXACOSANE	29.9	26.62	112	60-130

Parameter	H-C Range
ORO	C24-C36

METHOD SW3520C/8081B
PESTICIDES

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/19/16 10:15
Sample ID:	CAFB-IDW-W-05132016	Date Analyzed:	05/20/16 17:36
Lab Samp ID:	E133-02	Dilution Factor:	1.06
Lab File ID:	ME20009B	Matrix :	WATER
Ext Btch ID:	CPE015W	% Moisture :	NA
Calib. Ref.:	ME20004B	Instrument ID :	GCE8

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	0.012J | (ND)	0.11	0.0053	0.011
HEPTACHLOR	0.20 | (ND)	0.11	0.0074	0.011
HEPTACHLOR EPOXIDE	ND | (ND)	0.11	0.0053	0.011
GAMMA-CHLORDANE	0.031J | (ND)	0.11	0.0053	0.011
ALPHA-CHLORDANE	ND | (ND)	0.11	0.0053	0.011
ENDRIN	ND | (ND)	0.11	0.0085	0.011
METHOXYCHLOR	ND | (ND)	1.1	0.053	0.11
TOXAPHENE	ND | (ND)	2.1	0.26	0.53

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	0.4823 | (0.4802)	0.4000	121 | (120)	25-140
DECACHLOROBIPHENYL	0.4133 | (0.4456)	0.4000	103 | (111)	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

METHOD SW1311/3520C/8081B
TCLP PESTICIDES

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/23/16 10:00
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/24/16 15:14
Lab Samp ID:	E133-03	Dilution Factor:	10
Lab File ID:	ME24013A	Matrix	: WATER
Ext Btch ID:	CPE018W	% Moisture	: 4.0
Calib. Ref.:	ME24004A	Instrument ID	: GCE8

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GAMMA-BHC (LINDANE)	(ND) | ND	1.0	0.050	0.10
HEPTACHLOR	(ND) | ND	1.0	0.070	0.10
HEPTACHLOR EPOXIDE	(ND) | ND	1.0	0.050	0.10
GAMMA-CHLORDANE	(ND) | ND	1.0	0.050	0.10
ALPHA-CHLORDANE	(ND) | ND	1.0	0.050	0.10
ENDRIN	(ND) | ND	1.0	0.080	0.10
METHOXYCHLOR	(ND) | ND	10	0.50	1.0
TOXAPHENE	(ND) | ND	20	2.5	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(3.748) | 3.565	4.000	(93.7) | 89.1	25-140
DECACHLOROBIPHENYL	4.015 | (4.178)	4.000	100 | (104)	30-135

Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

DateTime Leached: 05/20/16 18:30

METHOD 8151A
HERBICIDES

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/18/16 10:40
Sample ID:	CAFB-IDW-W-05132016	Date Analyzed:	05/19/16 13:24
Lab Samp ID:	E133-02I	Dilution Factor:	5
Lab File ID:	WE19006A	Matrix :	WATER
Ext Btch ID:	HEE007W	% Moisture :	NA
Calib. Ref.:	WE19002A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	5.7|(10)	2.0	0.50	1.0
2,4,5-TP (SILVEX)	(ND)|ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	(11.78)|10.99	10.00	(118)|110	50-130

METHOD SW1311/8151A
TCLP HERBICIDES

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
Batch No.	: 16E133	Date Extracted:	05/23/16 11:00
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/24/16 18:41
Lab Samp ID:	E133-03	Dilution Factor:	50
Lab File ID:	WE24018A	Matrix :	LEACHATE
Ext Btch ID:	HEE008W	% Moisture :	NA
Calib. Ref.:	WE24014A	Instrument ID :	GCT016

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
2,4-D	(ND)|ND	20	5.0	10
2,4,5-TP (SILVEX)	(ND)|ND	20	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
2,4-DCPAA	410.6|(462.9)	500.0	82.1|(92.6)	50-130

DateTime Leached: 05/20/16 18:30

METHOD SW6020A
TOTAL METALS BY ICP-MS

Client	: URS CORPORATION	Date Collected:	05/13/16
Project	: CANNON AFB PBR	Date Received:	05/14/16
SDG NO.	: 16E133	Date Extracted:	05/20/16 11:41
Sample ID:	CAFB-IDW-W-05132016	Date Analyzed:	05/23/16 20:34
Lab Samp ID:	E133-02	Dilution Factor:	1
Lab File ID:	F6E10069	Matrix :	WATER
Ext Btch ID:	IME032W	% Moisture :	NA
Calib. Ref.:	F6E10062	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	1.78	1.00	0.200	0.100
Barium	149	1.00	0.500	0.250
Cadmium	1.97	1.00	0.200	0.100
Chromium, total	16.0	1.00	0.200	0.100
Lead	3.70	1.00	0.200	0.100
Selenium	17.3	1.00	0.300	0.150
Silver	ND	1.00	0.200	0.100

METHOD SW1311/3010A/6010C
TCLP METALS BY ICP

Client	: URS CORPORATION	Date Collected:	05/13/16 08:00
Project	: CANNON AFB PBR	Date Received:	05/14/16
SDG NO.	: 16E133	Date Extracted:	05/23/16 14:43
Sample ID:	CAFB-IDW-S-05132016	Date Analyzed:	05/24/16 16:23
Lab Samp ID:	E133-03	Dilution Factor:	5
Lab File ID:	ID8E025026	Matrix :	LEACHATE
Ext Btch ID:	IPE033W	% Moisture :	NA
Calib. Ref.:	ID8E025020	Instrument ID :	EMAXTID8

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
Arsenic	0.0152J	0.0500	0.0150	0.0250
Barium	1.51	0.0500	0.00500	0.0100
Cadmium	ND	0.0500	0.00500	0.0100
Chromium	ND	0.0500	0.00750	0.0150
Lead	ND	0.0500	0.00850	0.0150
Selenium	ND	0.0500	0.0125	0.0250
Silver	ND	0.0500	0.00750	0.0150

DateTime Leached: 05/20/16 18:30

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16E133

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGE014WB	ND	1	NA	0.50	0.054	0.10	05/19/1619:11	05/19/1612:10	M47E011030	M47E011	HGE014W	NA	NA
LCS1W	HGE014WL	2.52	1	NA	0.50	0.054	0.10	05/19/1619:13	05/19/1612:10	M47E011031	M47E011	HGE014W	NA	NA
CAFB-IDW-W-05132016	E133-02	ND	1	NA	0.50	0.054	0.10	05/19/1619:22	05/19/1612:10	M47E011035	M47E011	HGE014W	05/13/1608:30	05/14/16
CAFB-IDW-W-05132016MS	E133-02M	2.35	1	NA	0.50	0.054	0.10	05/19/1619:27	05/19/1612:10	M47E011037	M47E011	HGE014W	05/13/1608:30	05/14/16
CAFB-IDW-W-05132016DUP	E133-02D	ND	1	NA	0.50	0.054	0.10	05/19/1619:29	05/19/1612:10	M47E011038	M47E011	HGE014W	05/13/1608:30	05/14/16

METHOD SW1311/7470A
TCLP MERCURY

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16E133

Matrix : LEACHATE
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N FACTOR	MOIST (%)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGE017WB	ND	1	NA	0.50	0.054	0.10	05/23/1618:35	05/23/1612:00	M47E013041	M47E013	HGE017W	NA	NA
LCS1W	HGE017WL	2.46	1	NA	0.50	0.054	0.10	05/23/1618:38	05/23/1612:00	M47E013042	M47E013	HGE017W	NA	NA
LCD1W	HGE017WC	2.45	1	NA	0.50	0.054	0.10	05/23/1618:40	05/23/1612:00	M47E013043	M47E013	HGE017W	NA	NA
MBLK2W	TXE014SB	ND	1	NA	5.0	0.54	1.0	05/23/1618:42	05/23/1612:00	M47E013044	M47E013	HGE017W	NA	NA
CAFB-IDW-S-05132016	E133-03	ND	1	NA	5.0	0.54	1.0	05/23/1618:51	05/23/1612:00	M47E013048	M47E013	HGE017W	05/13/1608:00	05/14/16
CAFB-IDW-S-05132016MS	E133-03M	25.6	1	NA	5.0	0.54	1.0	05/23/1618:56	05/23/1612:00	M47E013050	M47E013	HGE017W	05/13/1608:00	05/14/16
CAFB-IDW-S-05132016MSD	E133-03S	25.4	1	NA	5.0	0.54	1.0	05/23/1618:58	05/23/1612:00	M47E013051	M47E013	HGE017W	05/13/1608:00	05/14/16

DateTime Leached: 05/20/16 18:30
Note: 5 ml leachate was diluted to 50 ml reagent water prior to digestion.

METHOD SW9095B
Paint Filter Liquid Test

Client : URS CORPORATION
Project : CANNON AFB PBR
Batch No. : 16E133

Matrix : SOIL
Instrument ID : NA

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ml)	DLF	MOIST	LOQ (ml)	LOD (ml)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
CAFB-IDW-S-05132016	E133-03	ND	1	4.0	5.21	NA	05/15/1615:10	NA	PFE00201	PFE002	PFE002S	05/13/1608:00	05/14/16
CAFB-IDW-S-05132016DUP	E133-03D	ND	1	4.0	5.21	NA	05/15/1615:10	NA	PFE00202	PFE002	PFE002S	05/13/1608:00	05/14/16

D.2 – IDW Profile Sheet

Bill to URS/AECOM Account # 436508

Form 29-1
Clovis Regional Solid Waste Facility (CRSWF)
Generator Waste Profile Sheet

Profile Number 019

☐ Renewal for Profile Number _____ Waste Approval Expiration Date 7/30/16

Special Waste Type (Check One): ☐ Regulated Asbestos Waste; ☐ Non Regulated Asbestos Waste; ☐ Ash; ☐ Industrial (Non-Hazardous) Solid Waste
☐ Offal; (X) Petroleum Contaminated Soils; ☐ Sludge; ☐ Spill of a Chemical Substance or Product;
☐ Special Waste Not Otherwise Specified

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: CANNON AFB
2. Site Address: 402 S. Chindit Blvd
3. City/Zip: Cannon AFB 88103
4. State: New Mexico
5. County: Curry
6. Contact Name/Title: Sheen Kottkamp
7. Email Address: Sheen.Kottkamp.CTR@us.af.mil
8. Phone: 575-904-6743
9. FAX: —
10. NAICS Code:
11. Generator USEPA ID#: 757 212 4454
12. State ID# (if applicable):

B. Customer Information ☐ same as above

1. Customer Name: AECOM
2. Billing Address: 12120 Shamrock Plz Suite 100
3. City, State and Zip: Omaha, NE 68154
4. Contact Name: Mike Sonderman
5. Contact Email: micheal.sonderman@aecom.com
6. Phone: 505-715-2413 FAX:
7. Transporter Name: Little Gator Trucking
8. Transporter ID# (if appl.):
9. Transporter Address: 1966 South Roosevelt Road #8
10. City, State, and Zip: Portales, NM 88130

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: Non-Hazardous Soil State Waste Code(s): N/A

b. Describe Process Generating Waste or Source of Contamination:

Soils from investigation at multiple sites at Cannon AFB. Includes soil from petroleum contaminate site. Characterization samples indicate soil is not a special waste.

c. Typical Color(s): Brown

d. Strong Odor? ☐ Yes ☒ No Describe:

e. Physical State at 70° F: ☒ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other:

f. Layers? ☐ Single Layer ☐ Multi-layer ☐ NA

g. Water Reactive? ☐ Yes ☒ No If Yes, Describe:

h. Free Liquid Range (%): _____ to _____ ☐ NA (solid)

i. pH: ☐ 2.1-12.4 ☒ NA (solid) ☐ Actual:

j. Liquid Flash Point: ☐ ≥140° F ☒ NA (solid) ☐ Actual:

k. Flammable Solid: ☐ Yes ☒ No

l. Does the waste contain asbestos? ☐ Yes ☒ No

If yes, does the waste contain greater than 1% asbestos? ☐ Yes ☐ No (If yes, go to next question. If no, attach results of Polarized Light Microscopy)

Is the waste classified as regulated asbestos waste per 20.9.2.7(A)(9)(d) NMAC? ☐ Yes ☐ No

m. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%) ☐ (See Attached)

Constituents (total Composition Must be ≥100%)	Concentration %	Constituents (Total Composition Must be ≥ 100%)	Concentration %
1. SOIL 100%			
2.			
3.			

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Form 29-1
Clovis Regional Solid Waste Facility (CRSWF)
Generator Waste Profile Sheet

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

   a. ☐ Event ☐ Base/Ongoing (check one)

   b. Estimated Annual Quantity: 5 ☐ Tons ☐ Cubic Yards ☒ Drums ☐ Gallons ☐ Other (specify): _____

   c. Shipping Frequency: _____ Units per ☐ Month ☐ Quarter ☐ Year ☒ One Time ☐ Other

   d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☒ No

   e. USDOT Shipping Description (if applicable): _____

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): NA

D. Regulatory Status (Please check appropriate responses)

- Is this a USEPA (40 CFR Part 261)/State hazardous waste? ☐ Yes ☒ No
- Is this waste included in one or more of categories below? (Check all that apply) ☐ Yes ☒ No

  ☐ Delisted Hazardous Waste ☐ Excluded Wastes Under 40 CFR 261.4

  ☐ Treated Hazardous Waste Debris ☐ Treated Characteristic Hazardous Waste
- Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? ☐ Yes ☒ No
- Is the waste classified as ignitable by 40 CFR Part 261? ☐ Yes ☒ No
- Is the waste classified as corrosive by 40 CFR Part 261? ☐ Yes ☒ No
- Is the waste classified as reactive by 40 CFR Part 261? ☐ Yes ☒ No
- Is the waste classified as toxic by 40 CFR Part 261? ☐ Yes ☒ No
- Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☒ No
- Does the waste contain concentration of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☒ No
- Does the waste contain infectious waste? ☐ Yes ☒ No
- Is this remediation waste from a facility that a major sources of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☒ No

  If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☒ No

If any question from Section D was answered "yes", the waste cannot be accepted at CRSWF

E. Generator Certification (Please read and certify by signature below)

By signing this Generator Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazardous pertaining to this waste has been disclosed to CRSWF;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and,
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to the CRSWF prior to providing the waste to CRSWF.

Check all that apply:

☒ Attached analytical pertains to the waste. Identify laboratory & sample ID #s and parameters tested:

_____ # Pages _____

☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical).

Indicate the number of attached pages: _____

☒ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

6. For non-friable asbestos waste, the following are valid statements:

   - Public access to the asbestos waste is prevented at the point of generation.
   - The hauler has been instructed to prevent public access to the asbestos wastes during transportation.
   - If Category I non-friable asbestos containing material, the waste has not been subjected to sanding, grinding, cutting or abrading.
   - If Category II non-friable asbestos containing material, the waste has not been subjected to forces expected to break, crumble, pulverize or reduce the material to powder during the course of excavation, renovation, demolition or storage.
   - The hauler has been instructed to handle non-regulated asbestoses waste in a manner to prevent the asbestos waste from becoming regulated asbestos waste.

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Form 29-1
Clovis Regional Solid Waste Facility (CRSWF)
Generator Waste Profile Sheet

7. For regulated asbestos waste, the following are valid statements:

- Public access to the asbestos waste is prevented at the point of generation.
- The hauler has been instructed to prevent public access to the asbestos wastes during transportation.
- Waste was wet, containerized and included the appropriate labels prior to transport and the outsides of the containers are not contaminated with asbestos debris adhering to the containers.
- The hauler has been instructed with the requirements of 20.9.8.12.E (3) NMAC.

Certification Signature: [signature] Title: Program Manager / Supervisor

Company Name: Cannon AFB / 27 SOCES Name (Print): Sheen T. Sotthamp

Date: 6/27/2016

FOR CRSWF USE ONLY

Approval Decision: ☒ Approved ☐ Not Approved

Waste Approval Expiration Date: 7/30/16

Management Facility Precautions, Special Handling Procedures or Limitation on approval: Not PCS Special Waste

☒ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste manifest must accompany load

CRSWF Authorization Name/Title: [signature] Date: 6/30/16

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Form 29-1
Clovis Regional Solid Waste Facility (CRSWF)
Generator Waste Profile Sheet

Profile Number 017

☐ Renewal for Profile Number _____ Waste Approval Expiration Date 6/30/16

Special Waste Type (Check One): ☐ Regulated Asbestos Waste; ☐ Non Regulated Asbestos Waste; ☐ Ash; ☐ Industrial (Non-Hazardous) Solid Waste ☐ Offal; ☒ Petroleum Contaminated Soils; ☐ Sludge; ☐ Spill of a Chemical Substance or Product; ☐ Special Waste Not Otherwise Specified

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: CANNON AFB
2. Site Address: 402. S. Chindit Blvd
3. City/Zip: Cannon AFB 88103
4. State: New Mexico
5. County: Curry
6. Contact Name/Title: Sheen Kott Kamp
7. Email Address: Sheen.KottKamp.CTR@us.af.mil
8. Phone: 575-904-6743
9. FAX:
10. NAICS Code:
11. Generator USEPA ID#: 757 212 4454
12. State ID# (if applicable):

B. Customer Information ☐ same as above

1. Customer Name: AECOM
2. Billing Address: 12120 Shamrock Plz Suite 100
3. City, State and Zip: Omaha, NE 68154
4. Contact Name: Mike Sonderman
5. Contact Email: michael.sonderman@aecom.com
6. Phone: 505-715-2413 FAX:
7. Transporter Name: Little Gator Trucking
8. Transporter ID# (if appl.):
9. Transporter Address: 1966. South Roosevelt RD#8
10. City, State, and Zip: Portales, NM 88130

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: Non-Hazardous Soil State Waste Code(s): N/A

b. Describe Process Generating Waste or Source of Contamination:

Soil From investigations at multiple site at Cannon AFB. Includes soil from a petroleum contaminated site. Characterization samples indicate soil is not a special waste.

c. Typical Color(s): Brown

d. Strong Odor? ☐ Yes ☒ No Describe:

e. Physical State at 70° F: ☒ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other:

f. Layers? ☐ Single Layer ☐ Multi-layer ☒ NA

g. Water Reactive? ☐ Yes ☒ No If Yes, Describe:

h. Free Liquid Range (%): _____ to _____ ☒ NA (solid)

i. pH: ☐ 2.1-12.4 ☒ NA (solid) ☐ Actual:

j. Liquid Flash Point: ☐ ≥140° F ☒ NA (solid) ☐ Actual:

k. Flammable Solid: ☐ Yes ☒ No

l. Does the waste contain asbestos? ☐ Yes ☒ No

If yes, does the waste contain greater than 1% asbestos? ☐ Yes ☐ No (If yes, go to next question. If no, attach results of Polarized Light Microscopy)

Is the waste classified as regulated asbestos waste per 20.9.2.7(A)(9)(d) NMAC? ☐ Yes ☐ No

m. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%) ☐ (See Attached)

Constituents (total Composition Must be ≥100%)	Concentration %	Constituents (Total Composition Must be ≥ 100%)	Concentration %
1. SOIL	100%		
2.			
3.			

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Form 29-1
Clovis Regional Solid Waste Facility (CRSWF)
Generator Waste Profile Sheet

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION
   a. ☒ Event ☐ Base/Ongoing (check one)
   b. Estimated Annual Quantity: 6 ☐ Tons ☐ Cubic Yards ☒ Drums ☐ Gallons ☐ Other (specify):
   c. Shipping Frequency: _____ Units per ☐ Month ☐ Quarter ☐ Year ☒ One Time ☐ Other
   d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☒ No
   e. USDOT Shipping Description (if applicable):
3. SAFETY REQUIREMENTS (Handling, PPE, etc.): NA

D. Regulatory Status (Please check appropriate responses)

- Is this a USEPA (40 CFR Part 261)/State hazardous waste? ☐ Yes ☒ No
- Is this waste included in one or more of categories below? (Check all that apply) ☐ Yes ☒ No
  - ☐ Delisted Hazardous Waste
  - ☐ Excluded Wastes Under 40 CFR 261.4
  - ☐ Treated Hazardous Waste Debris
  - ☐ Treated Characteristic Hazardous Waste
- Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? ☐ Yes ☒ No
- Is the waste classified as ignitable by 40 CFR Part 261? ☐ Yes ☒ No
- Is the waste classified as corrosive by 40 CFR Part 261? ☐ Yes ☒ No
- Is the waste classified as reactive by 40 CFR Part 261? ☐ Yes ☒ No
- Is the waste classified as toxic by 40 CFR Part 261? ☐ Yes ☒ No
- Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☒ No
- Does the waste contain concentration of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☒ No
- Does the waste contain infectious waste? ☐ Yes ☒ No
- Is this remediation waste from a facility that a major sources of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☒ No
  - If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☒ No

If any question from Section D was answered "yes", the waste cannot be accepted at CRSWF

E. Generator Certification (Please read and certify by signature below)

By signing this Generator Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazardous pertaining to this waste has been disclosed to CRSWF;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and,
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to the CRSWF prior to providing the waste to CRSWF.

Check all that apply:

☒ Attached analytical pertains to the waste. Identify laboratory & sample ID #s and parameters tested:

_____ # Pages _____

☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical).

Indicate the number of attached pages: _____

☒ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

6. For non-friable asbestos waste, the following are valid statements:
   - Public access to the asbestos waste is prevented at the point of generation.
   - The hauler has been instructed to prevent public access to the asbestos wastes during transportation.
   - If Category I non-friable asbestos containing material, the waste has not been subjected to sanding, grinding, cutting or abrading.
   - If Category II non-friable asbestos containing material, the waste has not been subjected to forces expected to break, crumble, pulverize or reduce the material to powder during the course of excavation, renovation, demolition or storage.
   - The hauler has been instructed to handle non-regulated asbestoses waste in a manner to prevent the asbestos waste from becoming regulated asbestos waste.

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Form 29-1
Clovis Regional Solid Waste Facility (CRSWF)
Generator Waste Profile Sheet

7. For regulated asbestos waste, the following are valid statements:

- Public access to the asbestos waste is prevented at the point of generation.
- The hauler has been instructed to prevent public access to the asbestos wastes during transportation.
- Waste was wet, containerized and included the appropriate labels prior to transport and the outsides of the containers are not contaminated with asbestos debris adhering to the containers.
- The hauler has been instructed with the requirements of 20.9.8.12.E (3) NMAC.

Certification Signature: [signature] Title: Program Manager / Scientist

Company Name: Cannon AFB / 27 SOCES Name (Print): Sheen T. Kottkamp

Date: 05/04/2016

FOR CRSWF USE ONLY

Approval Decision: ☑ Approved ☐ Not Approved

Waste Approval Expiration Date: 6/30/16

Management Facility Precautions, Special Handling Procedures or Limitation on approval: None

☑ Shall not contain free liquid
☑ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste manifest must accompany load

CRSWF Authorization Name/Title: [signature] Date: 5/17/16

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E.1 – SD012

TABLE E-1
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 10-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		C85-SS01-000				C85-SB01-000				C85-SB01-008				C85-SB02-000				C85-SB02-008			
DATE COLLECTED			Soil		October 22, 2008				October 22, 2008				October 22, 2008				October 22, 2008				October 22, 2008			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																								
Arsenic	8.24E+00	18 / 18	4.25E+00	NMED	RS				3.30E+00	9.00E-02	6.00E-01		2.80E+00	9.00E-02	6.00E-01		2.80E+00	9.00E-02	6.00E-01		1.60E+00	9.00E-02	6.00E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ.
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
*** Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-1
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 10-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		ST-1				ST-2				ST-3				CA012-C85-SS01A-000.5***				CA012-SS02-000.5			
DATE COLLECTED			Soil		1985 ****				1985 ****				1985 ****				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	8.24E+00	18 / 18	4.25E+00	NMED	1.60E+00	N/A	N/A		1.80E+00	N/A	N/A		1.50E+00	N/A	N/A		8.24E+00	1.24E-01	6.19E-01		3.15E+00	1.05E-01	5.27E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ.
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
*** Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-1
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 10-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		CA012-SS03-000.5				CA012-SS03-200.5 (Duplicate)				CA012-SS04-000.5				CA012-SS05-000.5			
DATE COLLECTED			Soil		May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																				
Arsenic	8.24E+00	18 / 18	4.25E+00	NMED	3.09E+00	9.97E-02	4.98E-01		3.48E+00	9.95E-02	4.97E-01		3.21E+00	9.95E-02	4.97E-01		2.99E+00	9.96E-02	4.98E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ.
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
*** Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-1
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 10-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		CA012-SS06-000.5				CA012-SS07-000.5				CA012-SS07-200.5 (Duplicate)				CA012-SS08-000.5			
DATE COLLECTED			Soil		May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																				
Arsenic	8.24E+00	18 / 18	4.25E+00	NMED	4.39E+00	1.11E-01	5.56E-01		2.94E+00	1.02E-01	5.09E-01		3.35E+00	1.03E-01	5.13E-01		3.16E+00	1.01E-01	5.05E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ.
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
*** Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-1
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 10-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		CA012-SS09-000.5				CA012-SS10-000.5				CA012-SS11-000.5			
DATE COLLECTED			Soil		May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																
Arsenic	8.24E+00	18 / 18	4.25E+00	NMED	4.54E+00	1.11E-01	5.54E-01		3.93E+00	1.09E-01	5.46E-01		3.05E+00	1.03E-01	5.17E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ.
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
*** Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-2
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 1-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		C85-SB01-000				C85-SB01-000				C85-SB02-000				ST-1				ST-2			
DATE COLLECTED			Soil		October 22, 2008				October 22, 2008				October 22, 2008				1985 ****				1985 ****			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																								
Arsenic	8.24E+00	16 / 16	4.25E+00	NMED	RS				3.30E+00	9.00E-02	6.00E-01		2.80E+00	9.00E-02	6.00E-01		1.60E+00	N/A	N/A		1.80E+00	N/A	N/A	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
****Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-2
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 1-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		ST-3				CA012-C85-SS01A-000.5***				CA012-SS02-000.5				CA012-SS03-000.5				CA012-SS03-200.5 (Duplicate)			
DATE COLLECTED			Soil		1985 ****				May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	MDL	RL	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	8.24E+00	16 / 16	4.25E+00	NMED	1.50E+00	N/A	N/A		8.24E+00	1.24E-01	6.19E-01		3.15E+00	1.05E-01	5.27E-01		3.09E+00	9.97E-02	4.98E-01		3.48E+00	9.95E-02	4.97E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
****Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-2
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 1-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		CA012-SS04-000.5				CA012-SS05-000.5				CA012-SS06-000.5				CA012-SS07-000.5				CA012-SS07-200.5 (Duplicate)			
DATE COLLECTED			Soil		May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	8.24E+00	16 / 16	4.25E+00	NMED	3.21E+00	9.95E-02	4.97E-01		2.99E+00	9.96E-02	4.98E-01		4.39E+00	1.11E-01	5.56E-01		2.94E+00	1.02E-01	5.09E-01		3.35E+00	1.03E-01	5.13E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
****Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-2
SUMMARY OF CHEMICAL DETECTIONS IN SOIL AT STORM WATER COLLECTION POINT (SOUTH PLAYA) (SD012)
0 TO 1-FOOT SOIL EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD ID			Residential		CA012-SS08-000.5				CA012-SS09-000.5				CA012-SS10-000.5				CA012-SS11-000.5			
DATE COLLECTED			Soil		May 14, 2016				May 14, 2016				May 14, 2016				May 14, 2016			
	Maximum	Frequency**	(mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																				
Arsenic	8.24E+00	16 / 16	4.25E+00	NMED	3.16E+00	1.01E-01	5.05E-01		4.54E+00	1.11E-01	5.54E-01		3.93E+00	1.09E-01	5.46E-01		3.05E+00	1.03E-01	5.17E-01	

Notes:
[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.
Shading indicates a concentration exceeds the screening value.
*DL = detection limit. DL value is shown if the detection is less than the LOQ
** Frequency does not include duplicate samples. The higher value between the duplicate and parent sample was used in the risk evaluation.
***This sample is a resample of C85-SS01-000.
****Precise date of collection could not be determined.
AFB = Air Force Base
mg/kg = milligrams per kilogram
LOQ = limit of quantitation
LOD = limit of detection
MDL = method detection limit
N/A = not applicable or not available
NMED = New Mexico Environment Department
Qual = qualifier
RL = reporting limit
RS = resampled
ID = identification

TABLE E-3
COMPARISON OF MAXIMUM DETECTED SUBSURFACE SOIL METAL CONCENTRATIONS AT SD012 TO BACKGROUND DATA
CANNON AFB, NEW MEXICO

Chemical	Maximum Subsurface Soil Concentration (mg/kg)	Frequency	Subsurface Soil Background UTL (mg/kg)	Does Site Max Exceed Background UTL (Y/N)?	Site Range of Detections (mg/kg)	Background Range of Detections (mg/kg)	Range Exceed Background Range?	Population Comparison	Retain For Further Evaluation (Y/N)?
Arsenic	2.80E+00	2 / 2	4.38E+00	N	N/A	N/A	N/A	N/A	N

Notes:

Maximum subsurface concentration from **Table E-1**. All samples from 1 to 10 feet below ground surface were included in the data set.

Background UTLs from **Table 2-1**.

AFB = Air Force Base

mg/kg = milligrams per kilogram

N = No

N/A = not applicable

UTL = upper tolerance limit

Y = Yes

TABLE E-4
COMPARISON OF MAXIMUM DETECTED SURFACE SOIL METAL CONCENTRATIONS AT SD012 TO BACKGROUND DATA
CANNON AFB, NEW MEXICO

Chemical	Maximum Surface Soil Concentration (mg/kg)	Frequency**	Surface Soil Background UTL (mg/kg)	Does Site Max Exceed Background UTL (Y/N)?	Site Range of Detections (mg/kg)	Background Range of Detections (mg/kg)	Does Site Range Exceed Background Range? (Y/N)	Population Comparison	Retain For Further Evaluation (Y/N)?
Arsenic	8.24E+00	16 / 16	5.16E+00	Y	1.5 - 8.24	1.5 - 3.3	Y	Site < BKG	N

Notes:

Maximum surface soil concentration from **Table E-2**. All samples from 0 to 1.5 feet below ground surface were included in the data set.

**Frequency does not include duplicate samples. The higher value between the duplicate and parent samples was used in the risk evaluation.

Background UTLs from **Table 2-1**.

< = less than

AFB = Air Force Base

mg/kg = milligrams per kilogram

BKG = background

N = No

UTL = upper tolerance limit

Y = Yes

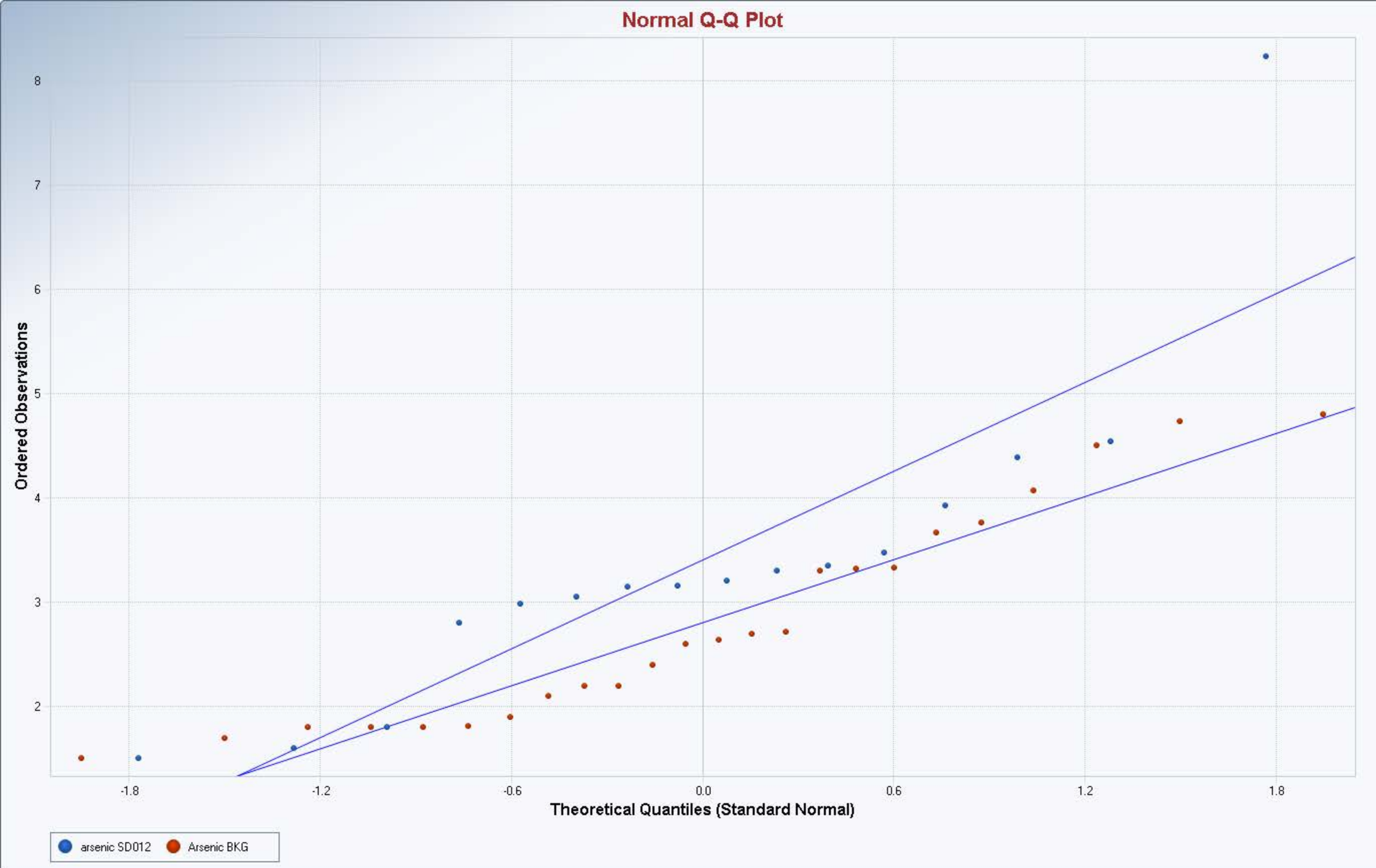
arsenic SD012	d_arsenic SD012	Arsenic BKG	d_Arsenic BKG
3.3	1	1.9	1
2.8	1	2.1	1
1.6	1	1.7	1
1.8	1	1.8	1
1.5	1	1.5	1
8.24	1	1.81	1
3.15	1	2.2	1
3.48	1	2.7	1
3.21	1	2.6	1
2.99	1	2.2	1
4.39	1	3.3	1
3.35	1	2.4	1
3.16	1	1.8	1
4.54	1	1.8	1
3.93	1	4.5	1
3.05	1	3.32	1
		4.07	1
		4.74	1
		3.33	1
		3.67	1
		3.76	1
		2.72	1
		4.8	1
		2.64	1

	A	B	C	D	E	F	G	H	I	J	K	L
1				**General Statistics on Uncensored Data**								
2		Date/Time of Computation		6/16/2016 9:29:07 AM								
3		**User Selected Options**										
4			From File	SD012 Site Metal Data.xls								
5			Full Precision	OFF								
6												
7	**From File: SD012 Site Metal Data.xls**											
8												
9	**General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method**											
10												
11	**Variable**	**NumObs**	**# Missing**	**Num Ds**	**NumNDs**	**% NDs**	**Min ND**	**Max ND**	**KM Mean**	**KM Var**	**KM SD**	
12	arsenic SD012	16	0	16	0	0.00%	N/A	N/A	3.406	2.415	1.554	
13	Arsenic BKG	24	0	24	0	0.00%	N/A	N/A	2.807	1.039	1.019	
14												
15	**General Statistics for Raw Data Sets using Detected Data Only**											
16												
17	**Variable**	**NumObs**	**# Missing**	**Minimum**	**Maximum**	**Mean**	**Median**	**Var**	**SD**	**MAD/0.675**	**Skewness**	
18	arsenic SD012	16	0	1.5	8.24	3.406	3.185	2.415	1.554	0.504	1.994	
19	Arsenic BKG	24	0	1.5	4.8	2.807	2.62	1.039	1.019	1.134	0.657	
20												
21	**Percentiles using all Detects (Ds) and Non-Detects (NDs)**											
22												
23	**Variable**	**NumObs**	**# Missing**	**10%ile**	**20%ile**	**25%ile(Q1)**	**50%ile(Q2)**	**75%ile(Q3)**	**80%ile**	**90%ile**	**95%ile**	
24	arsenic SD012	16	0	1.7	2.8	2.943	3.185	3.593	3.93	4.465	5.465	
25	Arsenic BKG	24	0	1.8	1.806	1.878	2.62	3.415	3.706	4.371	4.704	

	M
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	**KM CV**
12	0.456
13	0.363
14	
15	
16	
17	**CV**
18	0.456
19	0.363
20	
21	
22	
23	**99%ile**
24	7.685
25	4.786

	A	B	C	D	E	F	G	H	I	J	K	L
1	**t-Test Sample 1 vs Sample 2 Comparison for Uncensored Full Data Sets without NDs**											
2												
3	User Selected Options											
4	Date/Time of Computation			6/16/2016 9:30:17 AM								
5	From File			SD012 Site Metal Data.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Substantial Difference (S)			0.000								
9	Selected Null Hypothesis			Sample 1 Mean <= Sample 2 Mean (Form 1)								
10	Alternative Hypothesis			Sample 1 Mean > the Sample 2 Mean								
11												
12												
13	**Sample 1 Data: arsenic SD012**											
14	**Sample 2 Data: Arsenic BKG**											
15												
16												
17	**Raw Statistics**											
18					Sample 1	Sample 2						
19	Number of Valid Observations				16	24						
20	Number of Distinct Observations				16	21						
21	Minimum				1.5	1.5						
22	Maximum				8.24	4.8						
23	Mean				3.406	2.807						
24	Median				3.185	2.62						
25	SD				1.554	1.019						
26	SE of Mean				0.388	0.208						
27												
28	**Sample 1 vs Sample 2 Two-Sample t-Test**											
29												
30	**H0: Mean of Sample 1 - Mean of Sample 2 <= 0**											
31					t-Test	Critical						
32	Method			DF	Value	t (0.05)	P-Value					
33	Pooled (Equal Variance)			38	1.476	1.686	0.074					
34	Welch-Satterthwaite (Unequal Varian			23.6	1.359	1.711	0.093					
35	Pooled SD 1.258											
36	Conclusion with Alpha = 0.050											
37	Student t (Pooled) Test: Do Not Reject H0, Conclude Sample 1 <= Sample 2											
38	Welch-Satterthwaite Test: Do Not Reject H0, Conclude Sample 1 <= Sample 2											
39												
40												
41	**Test of Equality of Variances**											
42												
43			Variance of Sample 1		2.415							
44			Variance of Sample 2		1.039							
45												
46	Numerator DF		Denominator DF		F-Test Value		P-Value					
47	15		23		2.325		0.067					
48	Conclusion with Alpha = 0.05											
49	Two variances appear to be equal											
50												

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs**											
2												
3			User Selected Options									
4			Date/Time of Computation	6/16/2016 9:47:20 AM								
5			From File	SD012 Site Metal Data.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)								
10			Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median								
11												
12												
13	**Sample 1 Data: arsenic SD012**											
14	**Sample 2 Data: Arsenic BKG**											
15												
16				**Raw Statistics**								
17					Sample 1	Sample 2						
18				Number of Valid Observations	16	24						
19				Number of Distinct Observations	16	21						
20				Minimum	1.5	1.5						
21				Maximum	8.24	4.8						
22				Mean	3.406	2.807						
23				Median	3.185	2.62						
24				SD	1.554	1.019						
25				SE of Mean	0.388	0.208						
26												
27				**Wilcoxon-Mann-Whitney (WMW) Test**								
28												
29	**H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2**											
30												
31				Sample 1 Rank Sum W-Stat	369.5							
32				Standardized WMW U-Stat	1.133							
33				Mean (U)	192							
34				SD(U) - Adj ties	36.2							
35				Approximate U-Stat Critical Value (0.05)	1.645							
36				P-Value (Adjusted for Ties)	0.129							
37												
38	**Conclusion with Alpha = 0.05**											
39	**Do Not Reject H0, Conclude Sample 1 <= Sample 2**											
40	**P-Value >= alpha (0.05)**											
41												



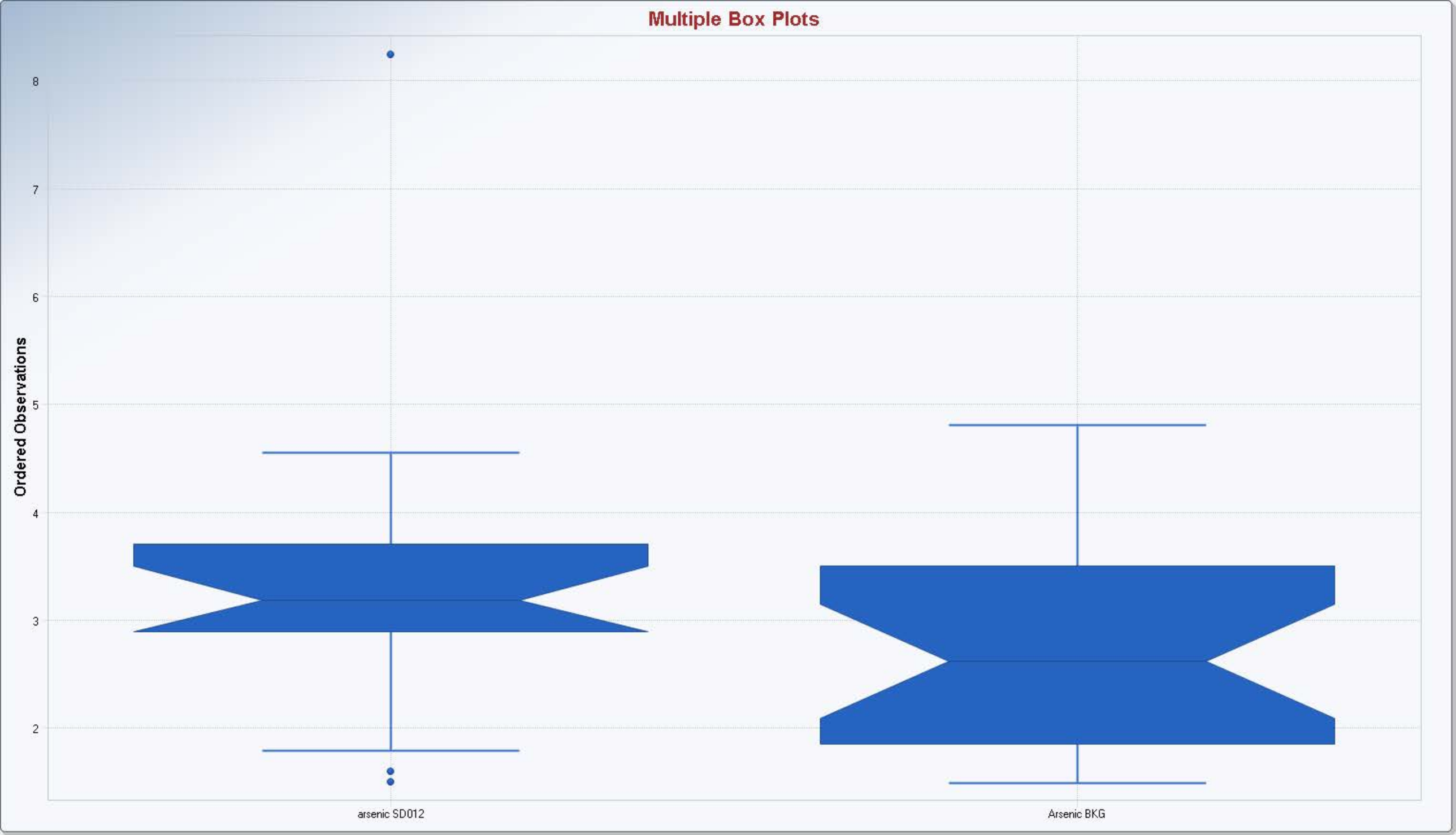
arsenic SD012

N = 16
Mean = 3.406
Sd = 1.554
Slope = 1.423
Intercept = 3.406
Correlation, R = 0.876

Arsenic BKG

N = 24
Mean = 2.807
Sd = 1.019
Slope = 1.012
Intercept = 2.807
Correlation, R = 0.961

Best Fit Line


Multiple Box Plots
Ordered Observations
8
7
6
5
4
3
2
arsenic SD012
Arsenic BKG

E.2 – SD017

TABLE E-5
SUMMARY OF SOIL ANALYTICAL DATA AT SD017
0 TO 10-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					0962			17A-1			17A-2			17A-3			17B-1			17B-2			17C-1			17C-2			17B-2a		
SAMPLE DEPTH					10 Feet			2 to 4 Feet			5 to 6 Feet			7.5 to 9.6 Feet			4 to 5.5 Feet			9 to 10.5 Feet			2 to 4 Feet			9.5 to 10.5 Feet			9.5 to 10.5 Feet		
DATE COLLECTED			Residential Soil (mg/kg)		Unknown			Unknown			Unknown			Unknown			Unknown			Unknown			Unknown			Unknown			Unknown		
	Maximum	Frequency**		Source[1]	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)																															
Arsenic	5.60E+00	27 / 27	4.25E+00	NMED	2.10E+00			4.10E+00			2.30E+00			1.40E+00			1.80E+00			5.60E+00			1.60E+00			1.20E+00			2.00E+00		

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation.

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

RL = reporting limit

SSL = soil screening level

TABLE E-5
SUMMARY OF SOIL ANALYTICAL DATA AT SD017
0 TO 10-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CA017-SB01-001				CA017-SB01-201 (Duplicate)				CA017-SB01-005				CA017-SB01-010				CA017-SB02-000.5			
SAMPLE DEPTH					1 foot bgs				1 foot bgs				5 feet bgs				10 feet bgs				0.5 foot bgs			
DATE COLLECTED			Residential Soil (mg/kg)		May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency**		Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.60E+00	27 / 27	4.25E+00	NMED	4.73E+00	1.06E-01	5.30E-01		3.48E+00	1.04E-01	5.21E-01		3.84E+00	1.16E-01	5.80E-01		2.47E+00	1.08E-01	5.39E-01		3.78E+00	1.06E-01	5.29E-01	

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation.

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

RL = reporting limit

SSL = soil screening level

TABLE E-5
SUMMARY OF SOIL ANALYTICAL DATA AT SD017
0 TO 10-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CA017-SB02-005				CA017-SB02-010				CA017-SB03-001				CA017-SB03-201 (Duplicate)				CA017-SB03-004.5			
SAMPLE DEPTH					5 feet bgs				10 feet bgs				1 foot bgs				1 foot bgs				4.5 feet bgs			
DATE COLLECTED					May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency**	Residential Soil (mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.60E+00	27 / 27	4.25E+00	NMED	4.15E+00	1.09E-01	5.44E-01		3.37E+00	1.06E-01	5.31E-01		4.63E+00	1.05E-01	5.26E-01		3.83E+00	1.05E-01	5.25E-01		2.67E+00	1.04E-01	5.19E-01	

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation.

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

RL = reporting limit

SSL = soil screening level

TABLE E-5
SUMMARY OF SOIL ANALYTICAL DATA AT SD017
0 TO 10-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CA017-SB03-010				CA017-SB04-002				CA017-SB04-005				CA017-SB04-010				CA017-SB05-001			
SAMPLE DEPTH					10 feet bgs				2 feet bgs				5 feet bgs				10 feet bgs				1 foot bgs			
DATE COLLECTED			Residential Soil (mg/kg)		May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency**		Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.60E+00	27 / 27	4.25E+00	NMED	2.60E+00	1.07E-01	5.37E-01		3.39E+00	1.01E-01	5.07E-01		3.22E+00	1.03E-01	5.17E-01		3.76E+00	1.09E-01	5.47E-01		3.65E+00	1.06E-01	5.31E-01	

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation.

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

RL = reporting limit

SSL = soil screening level

TABLE E-5
SUMMARY OF SOIL ANALYTICAL DATA AT SD017
0 TO 10-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CA017-SB05-005				CA017-SB05-010				CA017-SB06-000_5				CA017-SB06-005				CA017-SB06-010			
SAMPLE DEPTH					5 feet bgs				10 feet bgs				0.5 foot bgs				5 feet bgs				10 feet bgs			
DATE COLLECTED			Residential Soil (mg/kg)		May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency**		Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																								
Arsenic	5.60E+00	27 / 27	4.25E+00	NMED	2.80E+00	9.88E-02	4.94E-01		4.32E+00	1.10E-01	5.51E-01		3.65E+00	1.03E-01	5.13E-01		4.47E+00	1.08E-01	5.41E-01		2.66E+00	1.06E-01	5.28E-01	

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation.

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

RL = reporting limit

SSL = soil screening level

TABLE E-6
SUMMARY OF SURFACE SOIL ANALYTICAL DATA AT SD017
0 TO 1-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CA017-SB01-001				CA017-SB01-201 (Duplicate)				CA017-SB02-000.5				CA017-SB03-001			
SAMPLE DEPTH					1 foot bgs				1 foot bgs				0.5 foot bgs				1 foot bgs			
DATE COLLECTED					May 8, 2016				May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency**	Residential Soil (mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																				
Arsenic	4.73E+00	5 / 5	4.25E+00	NMED	4.73E+00	1.06E-01	5.30E-01		3.48E+00	1.04E-01	5.21E-01		3.78E+00	1.06E-01	5.29E-01		4.63E+00	1.05E-01	5.26E-01	

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations and Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation.

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

SSL = soil screening level

TABLE E-6
SUMMARY OF SURFACE SOIL ANALYTICAL DATA AT SD017
0 TO 1-FOOT EXPOSURE INTERVAL
CANNON AFB, NEW MEXICO

FIELD IDENTIFICATION					CA017-SB03-201 (Duplicate)				CA017-SB05-001				CA017-SB06-000.5			
SAMPLE DEPTH					1 foot bgs				1 foot bgs				0.5 foot bgs			
DATE COLLECTED					May 8, 2016				May 8, 2016				May 8, 2016			
	Maximum	Frequency**	Residential Soil (mg/kg)	Source[1]	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual	Result	DL/LOD*	LOQ	Qual
METALS (mg/kg)																
Arsenic	4.73E+00	5 / 5	4.25E+00	NMED	3.83E+00	1.05E-01	5.25E-01		3.65E+00	1.06E-01	5.31E-01		3.65E+00	1.03E-01	5.13E-01	

[1]NMED value from New Mexico Environment Department, Risk Assessment Guidance for Site Investigations a

Remediation, Soil Screening Levels, Table A-1, July 2015.

**Frequency does not include duplicates. The higher of the parent or duplicate result was used in the evaluation

Shaded results exceed the residential screening value.

AFB = Air Force Base

bgs = below ground surface

DL = Detection Limit. DL value is shown if the detection is less than the LOQ.

LOD = limit of detection

LOQ = limit of quantitation

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

Qual = qualifier

SSL = soil screening level

TABLE E-7
COMPARISON OF MAXIMUM DETECTED SUBSURFACE SOIL METAL CONCENTRATIONS AT SD017 TO BACKGROUND DATA
CANNON AFB, NEW MEXICO

Chemical	Maximum Subsurface Soil Concentration (mg/kg)	Frequency	Subsurface Soil Background UTL (mg/kg)	Does Site Max Exceed Background UTL (Y/N)?	Site Range of Detections (mg/kg)	Background Range of Detections (mg/kg)	Does Site Range Exceed Background Range (Y/N)?	Population Comparison	Retain For Further Evaluation (Y/N)?
Arsenic	5.60E+00	22 / 22	4.38E+00	Y	1.2 - 5.6	1.1 - 4.85	Y	Site < BKG	N

Notes:

Maximum subsurface concentration from **Table E-5**. All samples from 1 to 10 feet below ground surface were included in the data set.

Background UTLs from **Table 2-1**.

< = less than

AFB = Air Force Base

mg/kg = milligrams per kilogram

BKG = background

N = No

UTL = upper tolerance limit

Y = Yes

TABLE E-8
COMPARISON OF MAXIMUM DETECTED SURFACE SOIL METAL CONCENTRATIONS AT SD017 TO BACKGROUND DATA
CANNON AFB, NEW MEXICO

Chemical	Maximum Surface Soil Concentration (mg/kg)	Frequency	Surface Soil Background UTL (mg/kg)	Does Site Max Exceed Background UTL (Y/N)?	Site Range of Detections (mg/kg)	Background Range of Detections (mg/kg)	Does Site Range Exceed Background Range (Y/N)?	Population Comparison	Retain For Further Evaluation (Y/N)?
Arsenic	4.73E+00	5 / 5	5.16E+00	N	N/A	N/A	N/A	N/A	N

Notes:

Maximum surface soil concentration from **Table E-6**. All samples from 0 to 1 feet below ground surface were included in the data set.

Background UTLs from **Table 2-1**.

AFB = Air Force Base

mg/kg = milligrams per kilogram

N = No

N/A = not applicable

UTL = upper tolerance limit

Y = Yes

arsenic SD017	d_arsenic SD017	Arsenic BKG	d_Arsenic BKG
4.73	1	1.9	1
3.78	1	2.1	1
4.63	1	1.7	1
3.65	1	1.8	1
3.65	1	1.5	1
		1.81	1
		2.2	1
		2.7	1
		2.6	1
		2.2	1
		3.3	1
		2.4	1
		1.8	1
		1.8	1
		4.5	1
		3.32	1
		4.07	1
		4.74	1
		3.33	1
		3.67	1
		3.76	1
		2.72	1
		4.8	1
		2.64	1

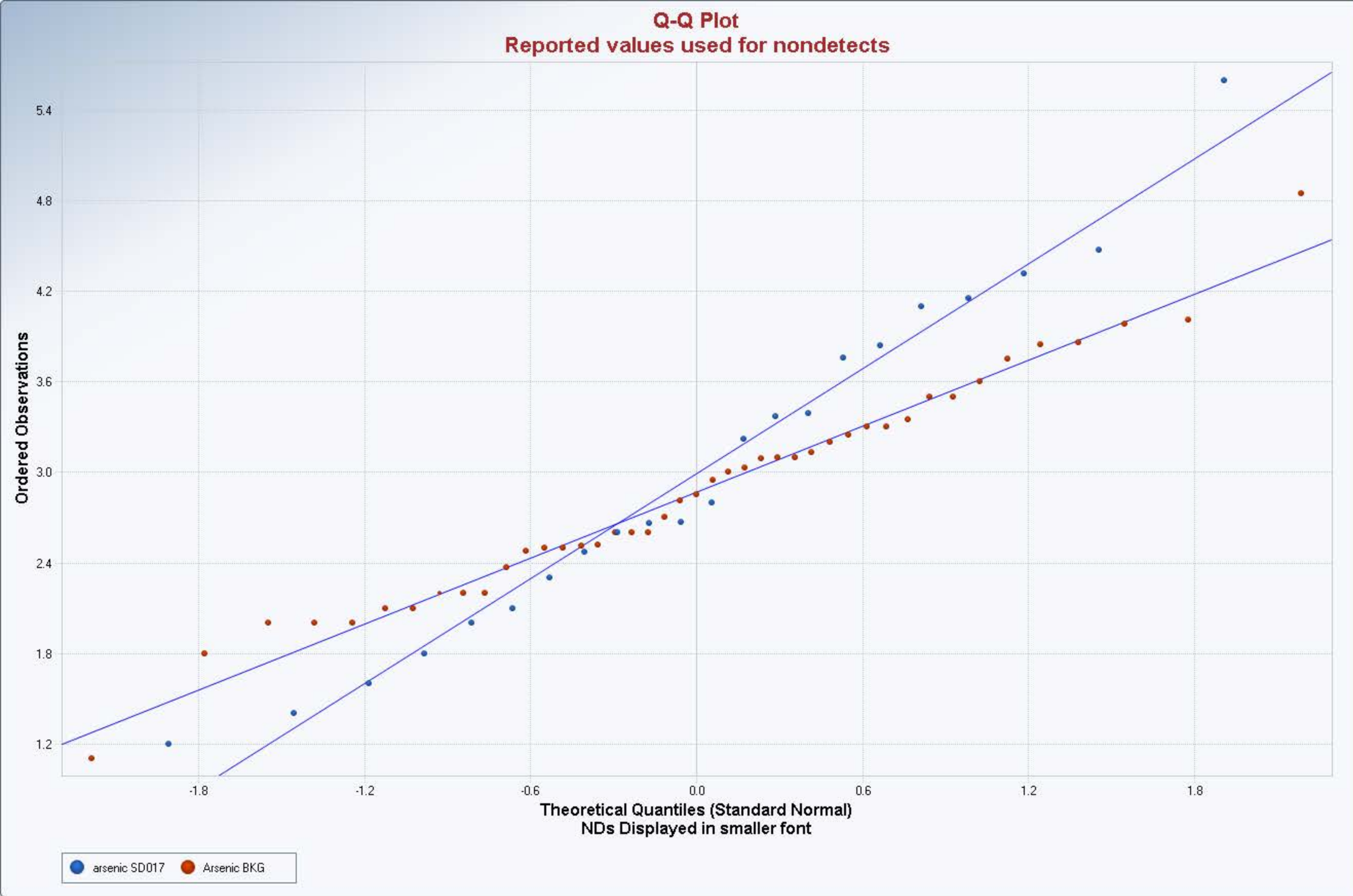
arsenic SD017	d_arsenic SD017	Arsenic BKG	d_Arsenic BKG
2.1	1	3	1
4.1	1	3.5	1
2.3	1	2.7	1
1.4	1	3.5	1
1.8	1	2.6	1
5.6	1	2.2	0
1.6	1	3.1	1
1.2	1	2.2	1
2	1	2	1
3.84	1	2.5	1
2.47	1	2.1	1
4.15	1	2.6	1
3.37	1	1.1	1
2.67	1	3.1	1
2.6	1	2.2	1
3.39	1	2	1
3.22	1	2.5	1
3.76	1	2.1	1
2.8	1	3.6	1
4.32	1	1.8	1
4.47	1	3.3	1
2.66	1	2.6	1
		3.3	1
		3.09	1
		2.85	1
		4.01	1
		3.03	1
		3.35	1
		2.81	1
		3.98	1
		3.13	1
		2	1
		3.86	1
		3.85	1
		3.25	1
		2.48	1
		2.37	1
		3.2	1
		2.52	1
		4.85	1
		2.95	1
		3.75	1
		2.51	1

	A	B	C	D	E	F	G	H	I	J	K	L
1				**General Statistics on Uncensored Data**								
2		Date/Time of Computation		6/8/2016 2:16:19 PM								
3		**User Selected Options**										
4		From File		SD017 Site Metal Data_a.xls								
5		Full Precision		OFF								
6												
7	**From File: SD017 Site Metal Data_a.xls**											
8												
9	**General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method**											
10												
11	**Variable**	**NumObs**	**# Missing**	**Num Ds**	**NumNDs**	**% NDs**	**Min ND**	**Max ND**	**KM Mean**	**KM Var**	**KM SD**	
12	arsenic SD017	22	0	22	0	0.00%	N/A	N/A	2.992	1.287	1.134	
13	Arsenic BKG	43	0	42	1	2.33%	2.2	2.2	2.863	0.524	0.724	
14												
15	**General Statistics for Raw Data Sets using Detected Data Only**											
16												
17	**Variable**	**NumObs**	**# Missing**	**Minimum**	**Maximum**	**Mean**	**Median**	**Var**	**SD**	**MAD/0.675**	**Skewness**	
18	arsenic SD017	22	0	1.2	5.6	2.992	2.735	1.287	1.134	1.238	0.393	
19	Arsenic BKG	42	0	1.1	4.85	2.887	2.9	0.522	0.723	0.608	0.186	
20												
21	**Percentiles using all Detects (Ds) and Non-Detects (NDs)**											
22												
23	**Variable**	**NumObs**	**# Missing**	**10%ile**	**20%ile**	**25%ile(Q1)**	**50%ile(Q2)**	**75%ile(Q3)**	**80%ile**	**90%ile**	**95%ile**	
24	arsenic SD017	22	0	1.62	2.02	2.15	2.735	3.82	4.048	4.303	4.463	
25	Arsenic BKG	43	0	2.02	2.2	2.425	2.85	3.3	3.44	3.83	3.968	

	M
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	**KM CV**
12	0.379
13	0.253
14	
15	
16	
17	**CV**
18	0.379
19	0.25
20	
21	
22	
23	**99%ile**
24	5.363
25	4.497

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Gehan Sample 1 vs Sample 2 Comparison Hypothesis Test for Data Sets with Non-Detects**											
2												
3			User Selected Options									
4			Date/Time of Computation	6/8/2016 2:26:47 PM								
5			From File	SD017 Site Metal Data_a.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)								
9			Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median								
10												
11												
12	**Sample 1 Data: arsenic SD017**											
13	**Sample 2 Data: Arsenic BKG**											
14												
15			**Raw Statistics**									
16					Sample 1	Sample 2						
17			Number of Valid Data		22	43						
18			Number of Non-Detects		0	1						
19			Number of Detect Data		22	42						
20			Minimum Non-Detect		N/A	2.2						
21			Maximum Non-Detect		N/A	2.2						
22			Percent Non-detects		0.00%	2.33%						
23			Minimum Detect		1.2	1.1						
24			Maximum Detect		5.6	4.85						
25			Mean of Detects		2.992	2.887						
26			Median of Detects		2.735	2.9						
27			SD of Detects		1.134	0.723						
28												
29			**Sample 1 vs Sample 2 Gehan Test**									
30												
31	**H0: Mean/Median of Sample 1 <= Mean/Median of background**											
32												
33			Gehan z Test Value		0.291							
34			Critical z (0.05)		1.645							
35			P-Value		0.385							
36												
37	**Conclusion with Alpha = 0.05**											
38		**Do Not Reject H0, Conclude Sample 1 <= Sample 2**										
39		**P-Value >= alpha (0.05)**										
40												

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Tarone-Ware Sample 1 vs Sample 2 Comparison Hypothesis Test for Data Sets with Non-Detects**											
2												
3	User Selected Options											
4	Date/Time of Computation			6/8/2016 2:27:51 PM								
5	From File			SD017 Site Metal Data_a.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Selected Null Hypothesis			Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)								
9	Alternative Hypothesis			Sample 1 Mean/Median > Sample 2 Mean/Median								
10												
11												
12	**Sample 1 Data: arsenic SD017**											
13	**Sample 2 Data: Arsenic BKG**											
14												
15	**Raw Statistics**											
16					Sample 1	Sample 2						
17			Number of Valid Data		22	43						
18			Number of Non-Detects		0	1						
19			Number of Detects		22	42						
20			Minimum Non-Detect		N/A	2.2						
21			Maximum Non-Detect		N/A	2.2						
22			Percent Non-detects		0.00%	2.33%						
23			Minimum Detect		1.2	1.1						
24			Maximum Detect		5.6	4.85						
25			Mean of Detects		2.992	2.887						
26			Median of Detects		2.735	2.9						
27			SD of Detects		1.134	0.723						
28												
29	**Sample 1 vs Sample 2 Tarone-Ware Test**											
30												
31	**H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2**											
32												
33			TW Statistic		-0.0274							
34			TW Critical Value (0.05)		1.645							
35			P-Value		0.511							
36												
37	**Conclusion with Alpha = 0.05**											
38	**Do Not Reject H0, Conclude Sample 1 <= Sample 2**											
39	**P-Value >= alpha (0.05)**											
40												



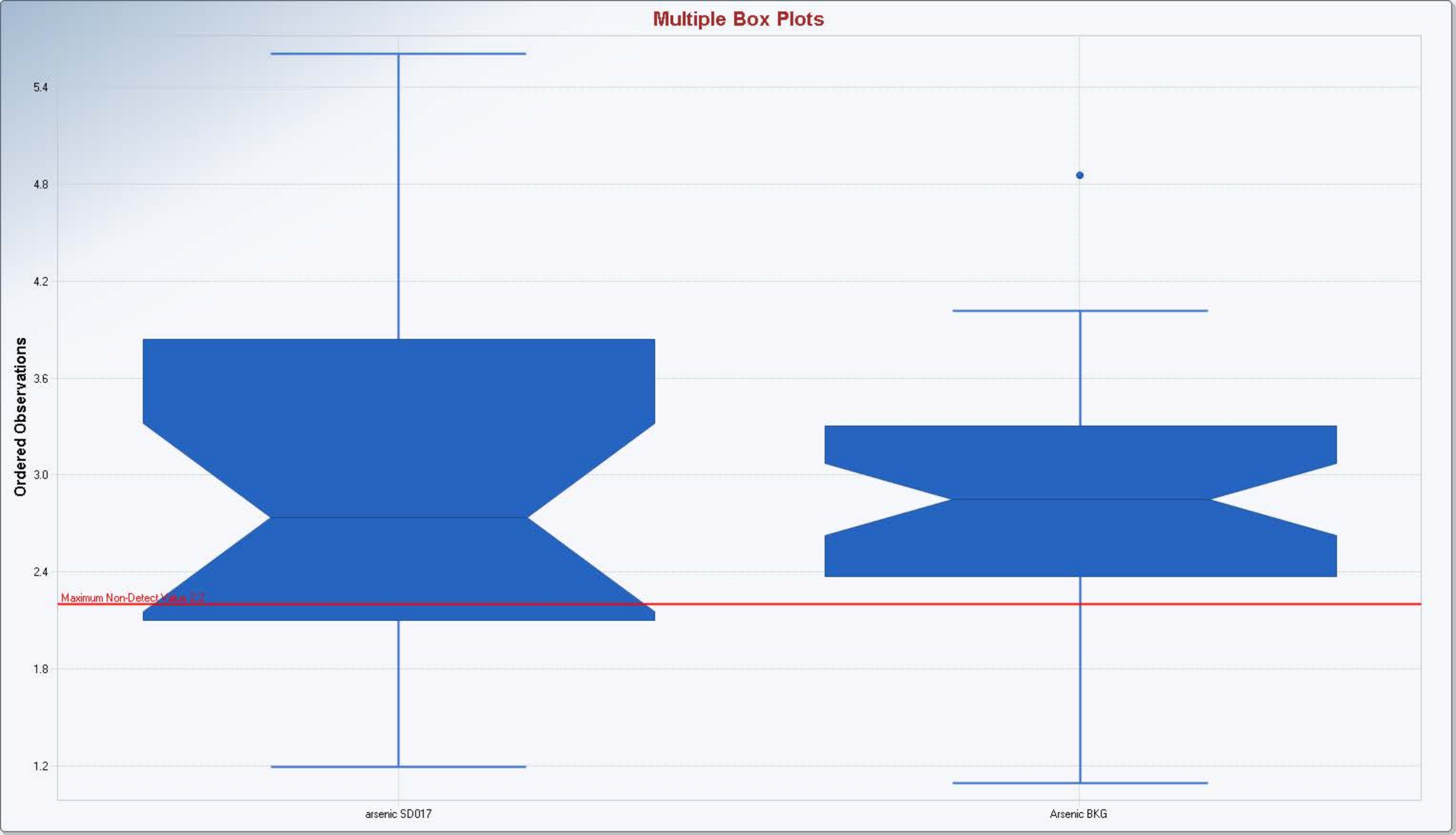
arsenic SD017

Total Number of Data = 22
Number of Non-Detects = 0
Number of Detects = 22
Detected Mean = 2.992
Detected Sd = 1.134
Slope (displayed data) = 1.161
Intercept (displayed data)= 2.992
Correlation, R = 0.988

Arsenic BKG

Total Number of Data = 43
Number of Non-Detects = 1
Number of Detects = 42
Detected Mean = 2.887
Detected Sd = 0.723
Slope (displayed data) = 0.729
Intercept (displayed data)= 2.871
Correlation, R = 0.99

Best Fit Line


Multiple Box Plots
Ordered Observations
5.4
4.8
4.2
3.6
3.0
2.4
1.8
1.2
Maximum Non-Detect Value 2.2
arsenic SD017
Arsenic BKG

E.3 – SD020

TABLE E-9
SUMMARY OF CHEMICAL DETECTIONS IN SUBSURFACE SOIL FROM THE 2009 RFI ADDENDUM
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			C95-SB01-008				C95-SB02-006				C95-SB03-008				C95-SB04-008				0951-04 (0953)			
DATE COLLECTED			October 22, 2008				October 21, 2008				October 22, 2008				October 22, 2008				December 7, 1991			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	3.80E+00	10 / 10	2.70E+00	9.00E-02	6.00E-01		3.70E+00	9.00E-02	6.00E-01		3.80E+00	9.00E-02	6.00E-01		2.80E+00	9.00E-02	6.00E-01		1.50E+00	N/A	N/A	

Notes:
MDLs and RLs were unavailable for MDLs and RLs with N/A
AFB = Air Force Base
ID = Identification
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Investigation
RL = Reporting Limit

TABLE E-9
SUMMARY OF CHEMICAL DETECTIONS IN SUBSURFACE SOIL FROM THE 2009 RFI ADDENDUM
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			0951-06 (0953)				0951-10 (0953)				0952-04 (0954)				0952-06 (0954)				0952-10 (0954)			
DATE COLLECTED			December 7, 1991				December 7, 1991				December 8, 1991				December 8, 1991				December 8, 1991			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																						
Arsenic	3.80E+00	10 / 10	2.30E+00	N/A	N/A		1.30E+00	N/A	N/A		1.90E+00	N/A	N/A		1.80E+00	N/A	N/A		1.90E+00	N/A	N/A	

Notes:
MDLs and RLs were unavailable for MDLs and RLs with N/A
AFB = Air Force Base
ID = Identification
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Invest
RL = Reporting Limit

TABLE E-10
SUMMARY OF CHEMICAL DETECTIONS IN SURFACE SOIL FROM THE 2009 RFI ADDENDUM
NE STORM WATER DRAINAGE AREA (SD020)
CANNON AFB, NEW MEXICO

FIELD ID			C95-SB01-000				C95-SB02-000				C95-SB03-000				C95-SB04-000				0951-0.5 (0953)				0952-0.5 (0954)			
DATE COLLECTED			October 22, 2008				October 21, 2008				October 22, 2008				October 22, 2008				December 7, 1991				December 8, 1991			
	Maximum	Frequency	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual	Result	MDL	RL	Qual
METALS (mg/kg)																										
Arsenic	4.60E+00	6 / 6	4.60E+00	9.00E-02	6.00E-01		3.70E+00	9.00E-02	6.00E-01		3.50E+00	9.00E-02	6.00E-01		3.70E+00	9.00E-02	6.00E-01		3.90E+00	N/A	N/A		2.20E+00	N/A	N/A	

Notes:
MDLs and RLs were unavailable for MDLs and RLs with N/A
AFB = Air Force Base
ID = Identification
mg/kg = milligrams per kilogram
MDL = Method Detection Limit
N/A = Not Applicable
NE = northeast
Qual = Qualifier
RFI = Resource Conservation and Recovery Act Facility Investigation
RL = Reporting Limit

TABLE E-11
COMPARISON OF MAXIMUM DETECTED SUBSURFACE SOIL METAL CONCENTRATIONS AT SD020 TO BACKGROUND DATA
CANNON AFB, NEW MEXICO

Chemical	Maximum Subsurface Soil Concentration (mg/kg)	Frequency	Subsurface Soil Background UTL (mg/kg)	Does Site Max Exceed Background UTL (Y/N)?	Site Range of Detections (mg/kg)	Background Range of Detections (mg/kg)	Does Site Range Exceed Background Range (Y/N)?	Population Comparison	Retain For Further Evaluation (Y/N)?
Arsenic	3.80E+00	10 / 10	4.38E+00	N	N/A	N/A	N/A	N/A	N

Notes:

Maximum subsurface concentration from **Table E-9**.

Background UTLs from **Table 2-1**.

AFB = not applicable

mg/kg = milligrams per kilogram

N/A = not applicable

N = No

UTL = upper tolerance limit

Y = Yes

TABLE E-12
COMPARISON OF MAXIMUM DETECTED SURFACE SOIL METAL CONCENTRATIONS AT SD020 TO BACKGROUND DATA
CANNON AFB, NEW MEXICO

Chemical	Maximum Surface Soil Concentration (mg/kg)	Frequency	Surface Soil Background UTL (mg/kg)	Does Site Max Exceed Background UTL (Y/N)?	Site Range of Detections (mg/kg)	Background Range of Detections (mg/kg)	Does Site Range Exceed Background Range (Y/N)?	Population Comparison	Retain For Further Evaluation (Y/N)?
Arsenic	4.60E+00	6 / 6	5.16E+00	N	N/A	N/A	N/A	N/A	N

Notes:

Maximum surface soil concentration from **Table E-10**.

Background UTLs from **Table 2-1**.

AFB = Air Force Base

mg/kg = milligrams per kilogram

N/A = not applicable

N = No

UTL = upper tolerance limit

Y = Yes

E.4 – Background Calculations

Arsenic BKG	d_Arsenic BKG	Thallium BKG	d_Thallium BKG
1.9	1	1.1	0
2.1	1	1.2	0
1.7	1	1	0
1.8	1	1.2	0
1.5	1	1	0
1.81	1	1.1	0
2.2	1	1	0
2.7	1	1	0
2.6	1	1.1	0
2.2	1	1	0
3.3	1	1	0
2.4	1	1	0
1.8	1	0.22	0
1.8	1	0.22	0
4.5	1	0.235	1
3.32	1	0.142	1
4.07	1	0.168	1
4.74	1	0.237	1
3.33	1	0.154	1
3.67	1	0.173	1
3.76	1	0.162	1
2.72	1	0.134	1
4.8	1	0.209	1
2.64	1	0.102	1

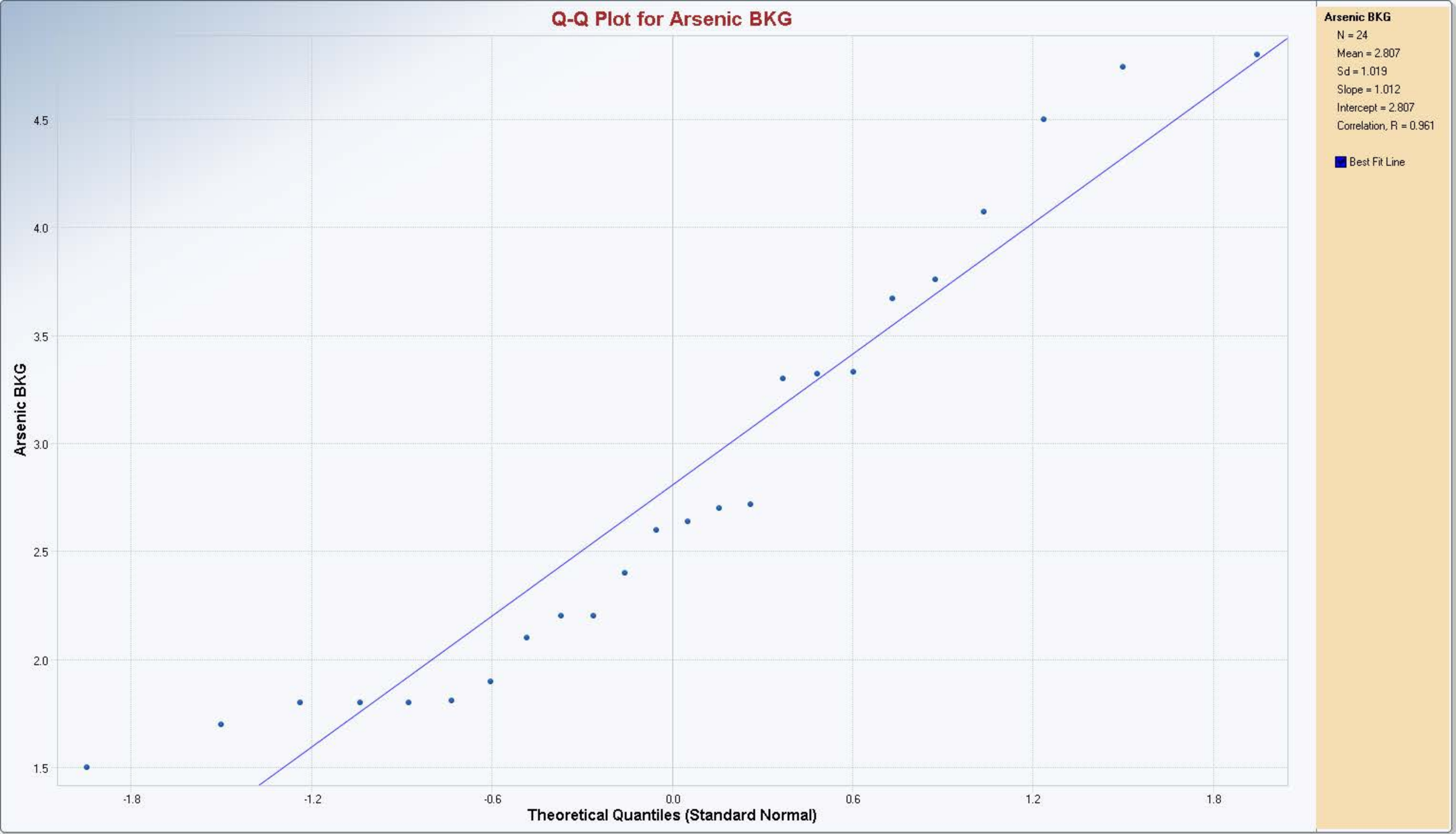
Arsenic BKG	d_Arsenic BKG	Thallium BKG	d_Thallium BKG
3	1	1.1	0
3.5	1	2.1	0
2.7	1	1.1	0
3.5	1	1.1	0
2.6	1	1.1	0
2.2	0	2.2	0
3.1	1	2.2	0
2.2	1	1.2	0
2	1	2.1	0
2.5	1	1.1	0
2.1	1	1.5	0
2.6	1	1.1	0
1.1	1	2.2	0
3.1	1	2.2	0
2.2	1	1.2	0
2	1	2.1	0
2.5	1	1.1	0
2.1	1	1.5	0
3.6	1	1.1	0
1.8	1	5.3	0
3.3	1	1.1	0
2.6	1	1.1	0
3.3	1	1.1	0
3.09	1	0.085	1
2.85	1	0.086	1
4.01	1	0.136	1
3.03	1	0.147	1
3.35	1	0.125	1
2.81	1	0.148	1
3.98	1	0.0979	1
3.13	1	0.127	1
2	1	0.09	1
3.86	1	0.0928	1
3.85	1	0.139	1
3.25	1	0.511	0
2.48	1	0.119	1
2.37	1	0.116	1
3.2	1	0.18	1
2.52	1	0.0756	1
4.85	1	0.0958	1
2.95	1	0.138	1
3.75	1	0.107	1
2.51	1	0.116	1

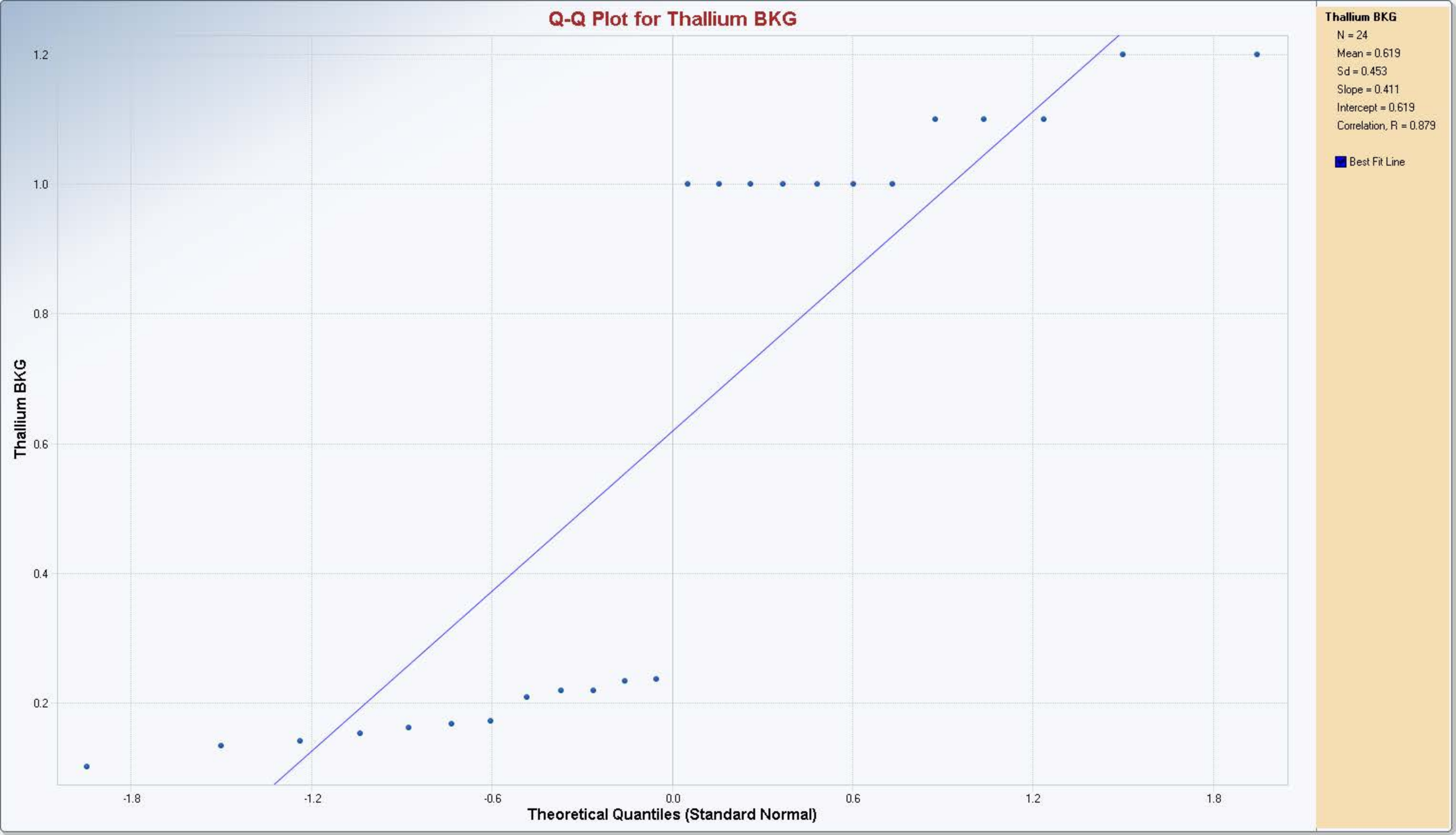
Arsenic BKG	d_Arsenic BKG	Thallium BKG	d_Thallium BKG
1.9	1	1.1	0
2.1	1	1.2	0
1.7	1	1	0
1.8	1	1.2	0
1.5	1	1	0
2.2	1	1	0
2.7	1	1	0
2.2	1	1	0
3.3	1	1	0
2.4	1	1	0
1.8	1	0.22	0
1.8	1	0.22	0
4.5	1	0.235	1
3.32	1	0.142	1
4.07	1	0.168	1
4.74	1	0.237	1
3.33	1	0.154	1
1.8	1	1.1	0
3	1	1.1	0
3.5	1	2.1	0
2.7	1	1.1	0
3.5	1	1.1	0
2.6	1	1.1	0
2.2	0	2.2	0
3.1	1	2.2	0
2.2	1	1.2	0
2	1	2.1	0
2.5	1	1.1	0
2.1	1	1.5	0
2.6	1	1.1	0
3.6	1	5.3	0
1.8	1	1.1	0
3.3	1	1.1	0
2.6	1	1.1	0
3.3	1	1.1	0
3.09	1	0.085	1
2.85	1	0.086	1
4.01	1	0.136	1
3.03	1	0.147	1
3.35	1	0.125	1
2.81	1	0.148	1
3.98	1	0.0979	1
3.13	1	0.127	1
2	1	0.09	1
3.86	1	0.0928	1

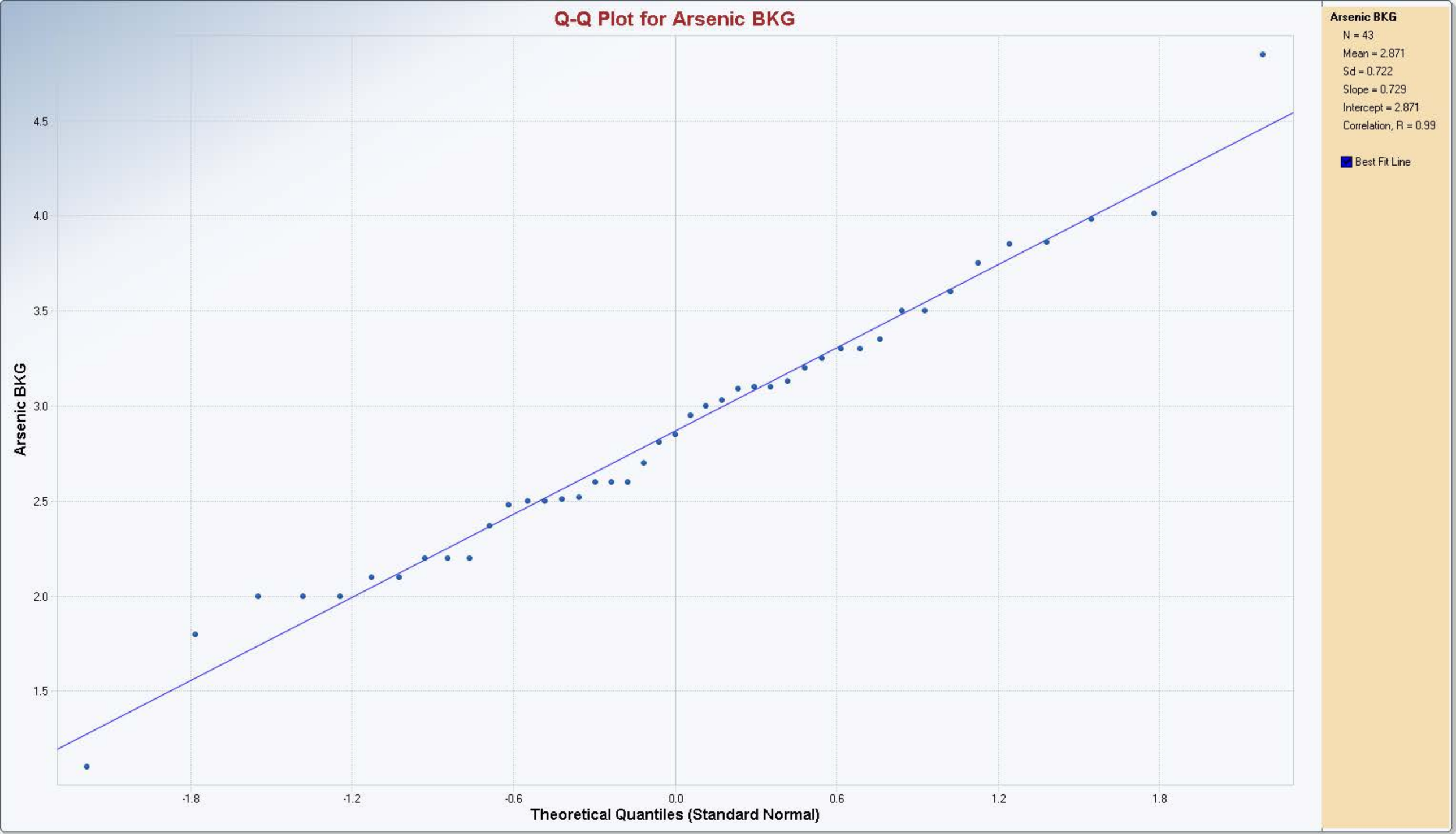
	A	B	C	D	E	F	G	H	I	J	K	L
1					**Outlier Tests for Selected Uncensored Variables**							
2				**User Selected Options**								
3			Date/Time of Computation		5/5/2016 2:05:50 PM							
4				From File	ProUCL Input for Background.xls							
5				Full Precision	OFF							
6												
7												
8	**Dixon's Outlier Test for Arsenic BKG**											
9												
10	Number of Observations = 24											
11	10% critical value: 0.367											
12	5% critical value: 0.413											
13	1% critical value: 0.497											
14												
15	**1. Observation Value 4.8 is a Potential Outlier (Upper Tail)?**											
16												
17	Test Statistic: 0.100											
18												
19	For 10% significance level, 4.8 is not an outlier.											
20	For 5% significance level, 4.8 is not an outlier.											
21	For 1% significance level, 4.8 is not an outlier.											
22												
23	**2. Observation Value 1.5 is a Potential Outlier (Lower Tail)?**											
24												
25	Test Statistic: 0.100											
26												
27	For 10% significance level, 1.5 is not an outlier.											
28	For 5% significance level, 1.5 is not an outlier.											
29	For 1% significance level, 1.5 is not an outlier.											
30												
31												
32	**Dixon's Outlier Test for Thallium BKG**											
33												
34	Number of Observations = 24											
35	10% critical value: 0.367											
36	5% critical value: 0.413											
37	1% critical value: 0.497											
38												
39	**1. Observation Value 1.2 is a Potential Outlier (Upper Tail)?**											
40												
41	Test Statistic: 0.095											
42												
43	For 10% significance level, 1.2 is not an outlier.											
44	For 5% significance level, 1.2 is not an outlier.											
45	For 1% significance level, 1.2 is not an outlier.											
46												
47	**2. Observation Value 0.102 is a Potential Outlier (Lower Tail**											
48												
49	Test Statistic: 0.040											
50												

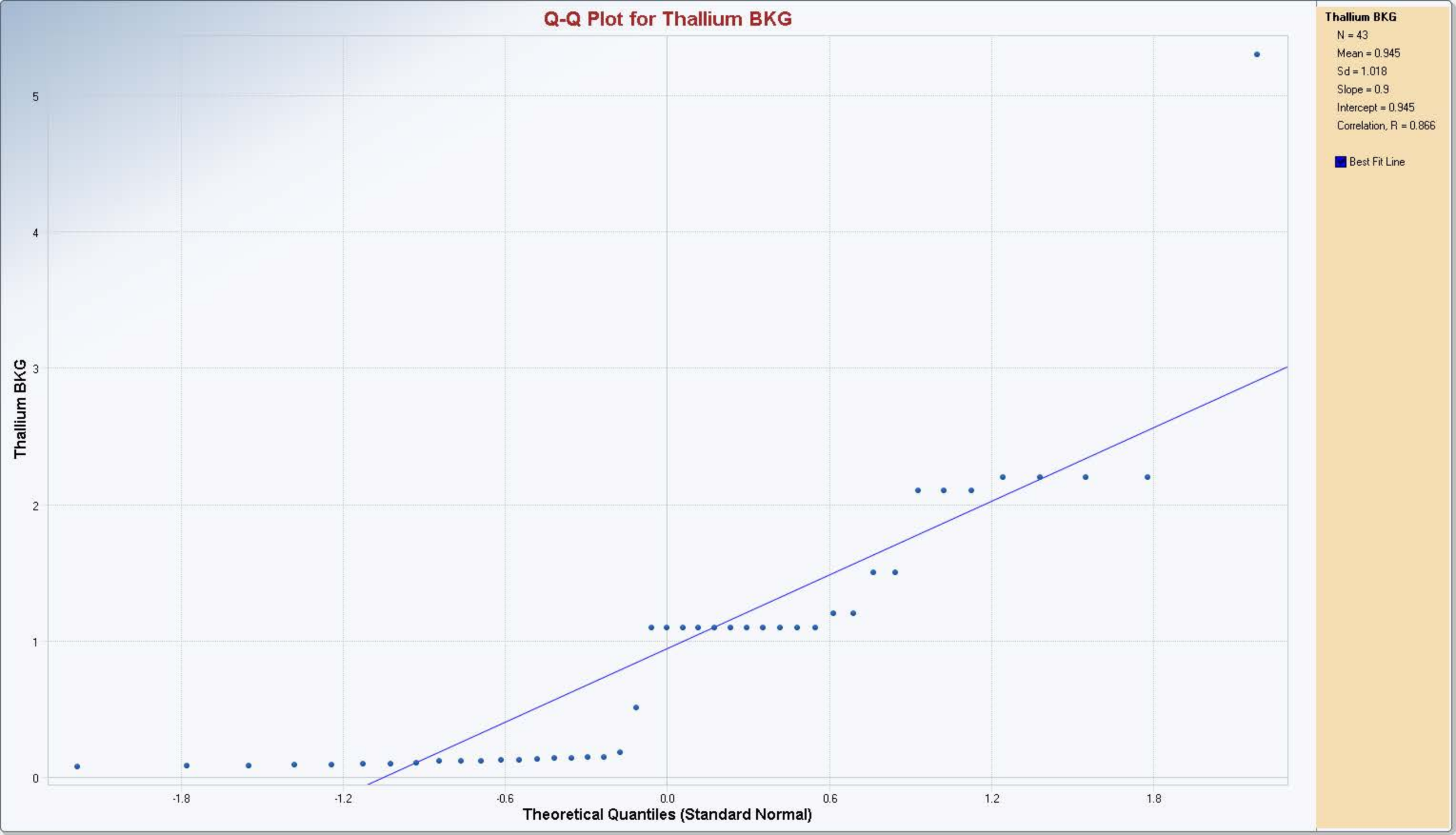
	A	B	C	D	E	F	G	H	I	J	K	L
51	For 10% significance level, 0.102 is not an outlier.											
52	For 5% significance level, 0.102 is not an outlier.											
53	For 1% significance level, 0.102 is not an outlier.											
54												

	A	B	C	D	E	F	G	H	I	J	K	L
1					**Outlier Tests for Selected Uncensored Variables**							
2				**User Selected Options**								
3			Date/Time of Computation	5/5/2016 2:07:37 PM								
4				From File	ProUCL Input for Background_a.xls							
5				Full Precision	OFF							
6												
7												
8				**Rosner's Outlier Test for Arsenic BKG**								
9												
10												
11				**Mean**	**2.871**							
12				**Standard Deviation**	**0.722**							
13				**Number of data**	**43**							
14				**Number of suspected outliers**	**1**							
15												
16				Potential	Obs.	Test	Critical	Critical				
17	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
18	1	2.871	0.713	4.85	40	2.775	3.07	3.41				
19												
20	For 5% Significance Level, there is no Potential Outlier											
21												
22	For 1% Significance Level, there is no Potential Outlier											
23												
24												
25				**Rosner's Outlier Test for Thallium BKG**								
26												
27												
28				**Mean**	**0.945**							
29				**Standard Deviation**	**1.018**							
30				**Number of data**	**43**							
31				**Number of suspected outliers**	**1**							
32												
33				Potential	Obs.	Test	Critical	Critical				
34	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
35	1	0.945	1.006	5.3	19	4.329	3.07	3.41				
36												
37	For 5% Significance Level, there is 1 Potential Outlier											
38	Potential outliers is: 5.3											
39												
40	For 1% Significance Level, there is 1 Potential Outlier											
41	Potential outliers is: 5.3											
42												


Q-Q Plot for Arsenic BKG
Arsenic BKG
N = 24
Mean = 2.807
Sd = 1.019
Slope = 1.012
Intercept = 2.807
Correlation, R = 0.961
Best Fit Line
Arsenic BKG
4.5
4.0
3.5
3.0
2.5
2.0
1.5
-1.8
-1.2
-0.6
0.0
0.6
1.2
1.8
Theoretical Quantiles (Standard Normal)


Q-Q Plot for Thallium BKG
Thallium BKG
N = 24
Mean = 0.619
Sd = 0.453
Slope = 0.411
Intercept = 0.619
Correlation, R = 0.879
Best Fit Line
Thallium BKG
1.2
1.0
0.8
0.6
0.4
0.2
-1.8
-1.2
-0.6
0.0
0.6
1.2
1.8
Theoretical Quantiles (Standard Normal)


Q-Q Plot for Arsenic BKG
Arsenic BKG
N = 43
Mean = 2.871
Sd = 0.722
Slope = 0.729
Intercept = 2.871
Correlation, R = 0.99
Best Fit Line
Arsenic BKG
4.5
4.0
3.5
3.0
2.5
2.0
1.5
-1.8
-1.2
-0.6
0.0
0.6
1.2
1.8
Theoretical Quantiles (Standard Normal)

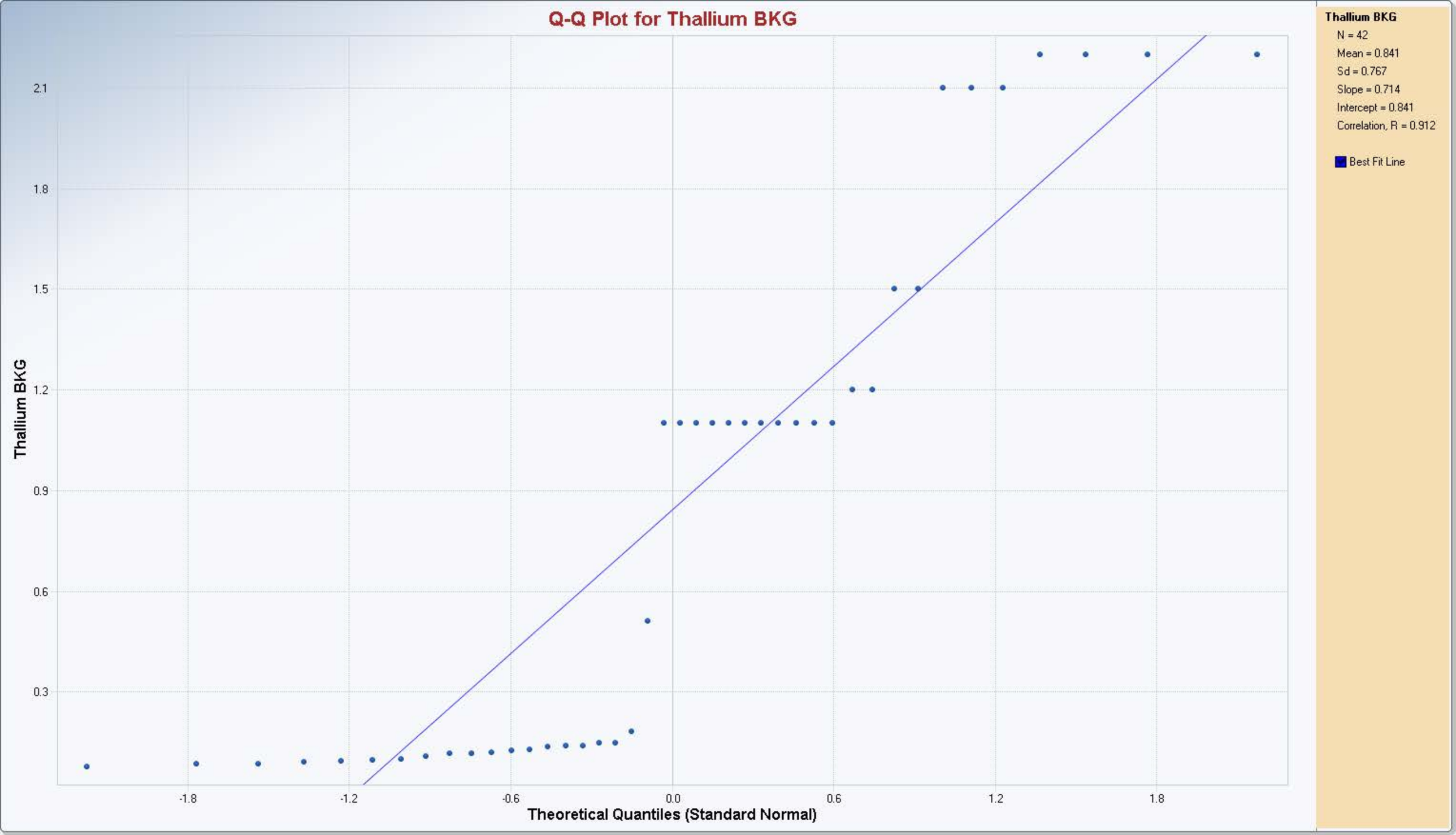

Q-Q Plot for Thallium BKG
Thallium BKG
N = 43
Mean = 0.945
Sd = 1.018
Slope = 0.9
Intercept = 0.945
Correlation, R = 0.866
Best Fit Line
Thallium BKG
Theoretical Quantiles (Standard Normal)
0
1
2
3
4
5
-1.8
-1.2
-0.6
0.0
0.6
1.2
1.8

Arsenic BKG	d_Arsenic BKG	Thallium BKG	d_Thallium BKG
1.9	1	1.1	0
2.1	1	1.2	0
1.7	1	1	0
1.8	1	1.2	0
1.5	1	1	0
1.81	1	1.1	0
2.2	1	1	0
2.7	1	1	0
2.6	1	1.1	0
2.2	1	1	0
3.3	1	1	0
2.4	1	1	0
1.8	1	0.22	0
1.8	1	0.22	0
4.5	1	0.235	1
3.32	1	0.142	1
4.07	1	0.168	1
4.74	1	0.237	1
3.33	1	0.154	1
3.67	1	0.173	1
3.76	1	0.162	1
2.72	1	0.134	1
4.8	1	0.209	1
2.64	1	0.102	1

Arsenic BKG	d_Arsenic BKG	Thallium BKG	d_Thallium BKG
3	1	1.1	0
3.5	1	2.1	0
2.7	1	1.1	0
3.5	1	1.1	0
2.6	1	1.1	0
2.2	0	2.2	0
3.1	1	2.2	0
2.2	1	1.2	0
2	1	2.1	0
2.5	1	1.1	0
2.1	1	1.5	0
2.6	1	1.1	0
1.1	1	2.2	0
3.1	1	2.2	0
2.2	1	1.2	0
2	1	2.1	0
2.5	1	1.1	0
2.1	1	1.5	0
3.6	1	1.1	0
1.8	1	1.1	0
3.3	1	1.1	0
2.6	1	1.1	0
3.3	1	0.085	1
3.09	1	0.086	1
2.85	1	0.136	1
4.01	1	0.147	1
3.03	1	0.125	1
3.35	1	0.148	1
2.81	1	0.0979	1
3.98	1	0.127	1
3.13	1	0.09	1
2	1	0.0928	1
3.86	1	0.139	1
3.85	1	0.511	0
3.25	1	0.119	1
2.48	1	0.116	1
2.37	1	0.18	1
3.2	1	0.0756	1
2.52	1	0.0958	1
4.85	1	0.138	1
2.95	1	0.107	1
3.75	1	0.116	1
2.51	1		

Arsenic BKG	d_Arsenic BKG	Thallium BKG	d_Thallium BKG
1.9	1	1.1	0
2.1	1	1.2	0
1.7	1	1	0
1.8	1	1.2	0
1.5	1	1	0
2.2	1	1	0
2.7	1	1	0
2.2	1	1	0
3.3	1	1	0
2.4	1	1	0
1.8	1	0.22	0
1.8	1	0.22	0
4.5	1	0.235	1
3.32	1	0.142	1
4.07	1	0.168	1
4.74	1	0.237	1
3.33	1	0.154	1
1.8	1	1.1	0
3	1	1.1	0
3.5	1	2.1	0
2.7	1	1.1	0
3.5	1	1.1	0
2.6	1	1.1	0
2.2	0	2.2	0
3.1	1	2.2	0
2.2	1	1.2	0
2	1	2.1	0
2.5	1	1.1	0
2.1	1	1.5	0
2.6	1	1.1	0
3.6	1	5.3	0
1.8	1	1.1	0
3.3	1	1.1	0
2.6	1	1.1	0
3.3	1	1.1	0
3.09	1	0.085	1
2.85	1	0.086	1
4.01	1	0.136	1
3.03	1	0.147	1
3.35	1	0.125	1
2.81	1	0.148	1
3.98	1	0.0979	1
3.13	1	0.127	1
2	1	0.09	1
3.86	1	0.0928	1

	A	B	C	D	E	F	G	H	I	J	K	L
1					**Outlier Tests for Selected Uncensored Variables**							
2			**User Selected Options**									
3			Date/Time of Computation	5/5/2016 2:24:47 PM								
4				From File	ProUCL Input for Background_Post Outlier 1_a.xls							
5				Full Precision	OFF							
6												
7												
8			**Rosner's Outlier Test for Thallium BKG**									
9												
10												
11			**Mean**	**0.841**								
12			**Standard Deviation**	**0.767**								
13			**Number of data**	**42**								
14			**Number of suspected outliers**	**1**								
15												
16				Potential	Obs.	Test	Critical	Critical				
17	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
18	1	0.841	0.757	2.2	6	1.794	3.06	3.4				
19												
20	For 5% Significance Level, there is no Potential Outlier											
21												
22	For 1% Significance Level, there is no Potential Outlier											
23												


Q-Q Plot for Thallium BKG
Thallium BKG
N = 42
Mean = 0.841
Sd = 0.767
Slope = 0.714
Intercept = 0.841
Correlation, R = 0.912
Best Fit Line
Thallium BKG
2.1
1.8
1.5
1.2
0.9
0.6
0.3
-1.8
-1.2
-0.6
0.0
0.6
1.2
1.8
Theoretical Quantiles (Standard Normal)

	A	B	C	D	E	F	G	H	I	J	K	L
1				**General Statistics on Uncensored Data**								
2		Date/Time of Computation		5/5/2016 2:46:19 PM								
3		**User Selected Options**										
4		From File		ProUCL Input for Background_Post Outlier 1.xls								
5		Full Precision		OFF								
6												
7	**From File: ProUCL Input for Background_Post Outlier 1.xls**											
8												
9	**General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method**											
10												
11	**Variable**		**NumObs**	**# Missing**	**Num Ds**	**NumNDs**	**% NDs**	**Min ND**	**Max ND**	**KM Mean**	**KM Var**	**KM SD**
12	Arsenic BKG		24	0	24	0	0.00%	N/A	N/A	2.807	1.039	1.019
13	Thallium BKG		24	0	10	14	58.33%	0.22	1.2	0.169	0.00162	0.0402
14												
15	**General Statistics for Raw Data Sets using Detected Data Only**											
16												
17	**Variable**		**NumObs**	**# Missing**	**Minimum**	**Maximum**	**Mean**	**Median**	**Var**	**SD**	**MAD/0.675**	**Skewness**
18	Arsenic BKG		24	0	1.5	4.8	2.807	2.62	1.039	1.019	1.134	0.657
19	Thallium BKG		10	0	0.102	0.237	0.172	0.165	0.00192	0.0438	0.04	0.272
20												
21	**Percentiles using all Detects (Ds) and Non-Detects (NDs)**											
22												
23	**Variable**		**NumObs**	**# Missing**	**10%ile**	**20%ile**	**25%ile(Q1)**	**50%ile(Q2)**	**75%ile(Q3)**	**80%ile**	**90%ile**	**95%ile**
24	Arsenic BKG		24	0	1.8	1.806	1.878	2.62	3.415	3.706	4.371	4.704
25	Thallium BKG		24	0	0.146	0.166	0.172	0.619	1	1.04	1.1	1.185

	M
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	**KM CV**
12	0.363
13	0.238
14	
15	
16	
17	**CV**
18	0.363
19	0.255
20	
21	
22	
23	**99%ile**
24	4.786
25	1.2

	A	B	C	D	E	F	G	H	I	J	K	L
1				General Statistics on Uncensored Data								
2		Date/Time of Computation		5/5/2016 2:46:57 PM								
3		User Selected Options										
4		From File		ProUCL Input for Background_Post Outlier 1_a.xls								
5		Full Precision		OFF								
6												
7	From File: ProUCL Input for Background_Post Outlier 1_a.xls											
8												
9	General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method											
10												
11	Variable		NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD
12	Arsenic BKG		43	0	42	1	2.33%	2.2	2.2	2.863	0.524	0.724
13	Thallium BKG		42	0	19	23	54.76%	0.511	2.2	0.117	6.9546E-4	0.0264
14												
15	General Statistics for Raw Data Sets using Detected Data Only											
16												
17	Variable		NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness
18	Arsenic BKG		42	0	1.1	4.85	2.887	2.9	0.522	0.723	0.608	0.186
19	Thallium BKG		19	0	0.0756	0.18	0.117	0.116	7.3409E-4	0.0271	0.0326	0.481
20												
21	Percentiles using all Detects (Ds) and Non-Detects (NDs)											
22												
23	Variable		NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile
24	Arsenic BKG		43	0	2.02	2.2	2.425	2.85	3.3	3.44	3.83	3.968
25	Thallium BKG		42	0	0.0931	0.116	0.121	1.1	1.175	1.44	2.1	2.2

	M
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	**KM CV**
12	0.253
13	0.226
14	
15	
16	
17	**CV**
18	0.25
19	0.232
20	
21	
22	
23	**99%ile**
24	4.497
25	2.2

	A	B	C	D	E	F	G	H	I	J	K	L
1				Background Statistics for Data Sets with Non-Detects								
2			User Selected Options									
3			Date/Time of Computation	5/5/2016 2:27:43 PM								
4			From File	ProUCL Input for Background_Post Outlier 1.xls								
5			Full Precision	OFF								
6			Confidence Coefficient	95%								
7			Coverage	95%								
8			Different or Future K Observations	1								
9			Number of Bootstrap Operations	2000								
10												
11	Arsenic BKG											
12												
13	General Statistics											
14			Total Number of Observations			24			Number of Distinct Observations			21
15			Minimum			1.5			First Quartile			1.878
16			Second Largest			4.74			Median			2.62
17			Maximum			4.8			Third Quartile			3.415
18			Mean			2.807			SD			1.019
19			Coefficient of Variation			0.363			Skewness			0.657
20			Mean of logged Data			0.971			SD of logged Data			0.355
21												
22				Critical Values for Background Threshold Values (BTVs)								
23			Tolerance Factor K (For UTL)			2.309			d2max (for USL)			2.644
24												
25				Normal GOF Test								
26			Shapiro Wilk Test Statistic			0.908			Shapiro Wilk GOF Test			
27			5% Shapiro Wilk Critical Value			0.916			Data Not Normal at 5% Significance Level			
28			Lilliefors Test Statistic			0.159			Lilliefors GOF Test			
29			5% Lilliefors Critical Value			0.181			Data appear Normal at 5% Significance Level			
30				Data appear Approximate Normal at 5% Significance Level								
31												
32				Background Statistics Assuming Normal Distribution								
33			95% UTL with 95% Coverage			5.16			90% Percentile (z)			4.113
34			95% UPL (t)			4.589			95% Percentile (z)			4.483
35			95% USL			5.501			99% Percentile (z)			5.177
36												
37				Gamma GOF Test								
38			A-D Test Statistic			0.553			Anderson-Darling Gamma GOF Test			
39			5% A-D Critical Value			0.745			Detected data appear Gamma Distributed at 5% Significance Level			
40			K-S Test Statistic			0.128			Kolmogrov-Smirnoff Gamma GOF Test			
41			5% K-S Critical Value			0.178			Detected data appear Gamma Distributed at 5% Significance Level			
42				Detected data appear Gamma Distributed at 5% Significance Level								
43												
44				Gamma Statistics								
45			k hat (MLE)			8.354			k star (bias corrected MLE)			7.338
46			Theta hat (MLE)			0.336			Theta star (bias corrected MLE)			0.382
47			nu hat (MLE)			401			nu star (bias corrected)			352.2
48			MLE Mean (bias corrected)			2.807			MLE Sd (bias corrected)			1.036
49												
50				Background Statistics Assuming Gamma Distribution								

	A	B	C	D	E	F	G	H	I	J	K	L
51					95% Wilson Hilferty (WH) Approx. Gamma UPL	4.763					90% Percentile	4.189
52					95% Hawkins Wixley (HW) Approx. Gamma UPL	4.795					95% Percentile	4.699
53					95% WH Approx. Gamma UTL with 95% Coverage	5.598					99% Percentile	5.759
54					95% HW Approx. Gamma UTL with 95% Coverage	5.681						
55					95% WH USL	6.142					95% HW USL	6.266
56												
57					**Lognormal GOF Test**							
58					Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk Lognormal GOF Test**					
59					5% Shapiro Wilk Critical Value	0.916	Data appear Lognormal at 5% Significance Level					
60					Lilliefors Test Statistic	0.115	**Lilliefors Lognormal GOF Test**					
61					5% Lilliefors Critical Value	0.181	Data appear Lognormal at 5% Significance Level					
62					**Data appear Lognormal at 5% Significance Level**							
63												
64					**Background Statistics assuming Lognormal Distribution**							
65					95% UTL with 95% Coverage	5.99					90% Percentile (z)	4.161
66					95% UPL (t)	4.911					95% Percentile (z)	4.733
67					95% USL	6.746					99% Percentile (z)	6.027
68												
69					**Nonparametric Distribution Free Background Statistics**							
70					**Data appear Approximate Normal at 5% Significance Level**							
71												
72					**Nonparametric Upper Limits for Background Threshold Values**							
73					Order of Statistic, r	24					95% UTL with 95% Coverage	4.8
74					Approximate f	1.263					Confidence Coefficient (CC) achieved by UTL	0.708
75					95% Percentile Bootstrap UTL with 95% Coverage	4.8					95% BCA Bootstrap UTL with 95% Coverage	4.8
76					95% UPL	4.785					90% Percentile	4.371
77					90% Chebyshev UPL	5.927					95% Percentile	4.704
78					95% Chebyshev UPL	7.34					99% Percentile	4.786
79					95% USL	4.8						
80												
81					Note: The use of USL to estimate a BTV is recommended only when the data set represents a background							
82					data set free of outliers and consists of observations collected from clean unimpacted locations.							
83					The use of USL tends to provide a balance between false positives and false negatives provided the data							
84					represents a background data set and when many onsite observations need to be compared with the BTV.							
85												
86	**Thallium BKG**											
87												
88					**General Statistics**							
89					Total Number of Observations	24					Number of Missing Observations	0
90					Number of Distinct Observations	14						
91					Number of Detects	10					Number of Non-Detects	14
92					Number of Distinct Detects	10					Number of Distinct Non-Detects	4
93					Minimum Detect	0.102					Minimum Non-Detect	0.22
94					Maximum Detect	0.237					Maximum Non-Detect	1.2
95					Variance Detected	0.00192					Percent Non-Detects	58.33%
96					Mean Detected	0.172					SD Detected	0.0438
97					Mean of Detected Logged Data	-1.793					SD of Detected Logged Data	0.262
98												
99					**Critical Values for Background Threshold Values (BTVs)**							
100					Tolerance Factor K (For UTL)	2.309					d2max (for USL)	2.644

	A	B	C	D	E	F	G	H	I	J	K	L
101												
102	**Normal GOF Test on Detects Only**											
103					Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**					
104					5% Shapiro Wilk Critical Value	0.842	Detected Data appear Normal at 5% Significance Level					
105					Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**					
106					5% Lilliefors Critical Value	0.28	Detected Data appear Normal at 5% Significance Level					
107	**Detected Data appear Normal at 5% Significance Level**											
108												
109	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
110					Mean	0.169				SD		0.0402
111					95% UTL95% Coverage	0.262				95% KM UPL (t)		0.239
112					90% KM Percentile (z)	0.22				95% KM Percentile (z)		0.235
113					99% KM Percentile (z)	0.262				95% KM USL		0.275
114												
115	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
116					Mean	0.345				SD		0.193
117					95% UTL95% Coverage	0.79				95% UPL (t)		0.682
118					90% Percentile (z)	0.592				95% Percentile (z)		0.662
119					99% Percentile (z)	0.793				95% USL		0.854
120	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
121												
122	**Gamma GOF Tests on Detected Observations Only**											
123					A-D Test Statistic	0.254	**Anderson-Darling GOF Test**					
124					5% A-D Critical Value	0.725	Detected data appear Gamma Distributed at 5% Significance Level					
125					K-S Test Statistic	0.154	**Kolmogrov-Smirnoff GOF**					
126					5% K-S Critical Value	0.266	Detected data appear Gamma Distributed at 5% Significance Level					
127	**Detected data appear Gamma Distributed at 5% Significance Level**											
128												
129	**Gamma Statistics on Detected Data Only**											
130					k hat (MLE)	16.76				k star (bias corrected MLE)		11.8
131					Theta hat (MLE)	0.0102				Theta star (bias corrected MLE)		0.0145
132					nu hat (MLE)	335.3				nu star (bias corrected)		236
133					MLE Mean (bias corrected)	0.172						
134					MLE Sd (bias corrected)	0.05				95% Percentile of Chisquare (2k)		35.92
135												
136	**Gamma ROS Statistics using Imputed Non-Detects**											
137	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
138	GROS may not be used when kstar of detected data is small such as < 0.1											
139	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
140	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
141					Minimum	0.102				Mean		0.168
142					Maximum	0.237				Median		0.165
143					SD	0.0353				CV		0.21
144					k hat (MLE)	23.68				k star (bias corrected MLE)		20.75
145					Theta hat (MLE)	0.00709				Theta star (bias corrected MLE)		0.00809
146					nu hat (MLE)	1137				nu star (bias corrected)		996
147					MLE Mean (bias corrected)	0.168				MLE Sd (bias corrected)		0.0369
148					95% Percentile of Chisquare (2k)	57.53				90% Percentile		0.217
149					95% Percentile	0.233				99% Percentile		0.265
150	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											

	A	B	C	D	E	F	G	H	I	J	K	L
151	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
152					WH	HW					WH	HW
153	95% Approx. Gamma UTL with 95% Coverage				0.26	0.262	95% Approx. Gamma UPL				0.234	0.235
154	95% Gamma USL				0.276	0.279						
155												
156	**The following statistics are computed using gamma distribution and KM estimates**											
157	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
158					k hat (KM)	17.65					nu hat (KM)	847.3
159					WH	HW					WH	HW
160	95% Approx. Gamma UTL with 95% Coverage				0.276	0.278	95% Approx. Gamma UPL				0.246	0.247
161	95% Gamma USL				0.295	0.299						
162												
163	**Lognormal GOF Test on Detected Observations Only**											
164	Shapiro Wilk Test Statistic					0.955	**Shapiro Wilk GOF Test**					
165	5% Shapiro Wilk Critical Value					0.842	Detected Data appear Lognormal at 5% Significance Level					
166	Lilliefors Test Statistic					0.142	**Lilliefors GOF Test**					
167	5% Lilliefors Critical Value					0.28	Detected Data appear Lognormal at 5% Significance Level					
168	**Detected Data appear Lognormal at 5% Significance Level**											
169												
170	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
171	Mean in Original Scale					0.167	Mean in Log Scale					-1.81
172	SD in Original Scale					0.0355	SD in Log Scale					0.213
173	95% UTL95% Coverage					0.267	95% BCA UTL95% Coverage					0.237
174	95% Bootstrap (%) UTL95% Coverage					0.237	95% UPL (t)					0.237
175	90% Percentile (z)					0.215	95% Percentile (z)					0.232
176	99% Percentile (z)					0.268	95% USL					0.287
177												
178	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
179	KM Mean of Logged Data					-1.807	95% KM UTL (Lognormal)95% Coverage					0.287
180	KM SD of Logged Data					0.243	95% KM UPL (Lognormal)					0.251
181	95% KM Percentile Lognormal (z)					0.245	95% KM USL (Lognormal)					0.312
182												
183	**Background DL/2 Statistics Assuming Lognormal Distribution**											
184	Mean in Original Scale					0.345	Mean in Log Scale					-1.25
185	SD in Original Scale					0.193	SD in Log Scale					0.657
186	95% UTL95% Coverage					1.306	95% UPL (t)					0.904
187	90% Percentile (z)					0.665	95% Percentile (z)					0.844
188	99% Percentile (z)					1.321	95% USL					1.628
189	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
190												
191	**Nonparametric Distribution Free Background Statistics**											
192	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
193												
194	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
195	Order of Statistic, r					24	95% UTL with95% Coverage					1.2
196	Approximate f					1.263	Confidence Coefficient (CC) achieved by UTL					0.708
197	95% UPL					1.2	95% USL					1.2
198	95% KM Chebyshev UPL					0.348						
199												
200	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											

	A	B	C	D	E	F	G	H	I	J	K	L
201	data set free of outliers and consists of observations collected from clean unimpacted locations.											
202	The use of USL tends to provide a balance between false positives and false negatives provided the data											
203	represents a background data set and when many onsite observations need to be compared with the BTV.											
204												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Background Statistics for Data Sets with Non-Detects								
2			User Selected Options									
3			Date/Time of Computation	5/5/2016 2:29:20 PM								
4			From File	ProUCL Input for Background_Post Outlier 1_a.xls								
5			Full Precision	OFF								
6			Confidence Coefficient	95%								
7			Coverage	95%								
8			Different or Future K Observations	1								
9			Number of Bootstrap Operations	2000								
10												
11	Arsenic BKG											
12												
13						General Statistics						
14						Total Number of Observations	43			Number of Missing Observations		0
15						Number of Distinct Observations	32					
16						Number of Detects	42			Number of Non-Detects		1
17						Number of Distinct Detects	32			Number of Distinct Non-Detects		1
18						Minimum Detect	1.1			Minimum Non-Detect		2.2
19						Maximum Detect	4.85			Maximum Non-Detect		2.2
20						Variance Detected	0.522			Percent Non-Detects		2.326%
21						Mean Detected	2.887			SD Detected		0.723
22						Mean of Detected Logged Data	1.027			SD of Detected Logged Data		0.27
23												
24						Critical Values for Background Threshold Values (BTVs)						
25						Tolerance Factor K (For UTL)	2.097			d2max (for USL)		2.897
26												
27						Normal GOF Test on Detects Only						
28						Shapiro Wilk Test Statistic	0.946			Shapiro Wilk GOF Test		
29						5% Shapiro Wilk Critical Value	0.942			Detected Data appear Normal at 5% Significance Level		
30						Lilliefors Test Statistic	0.0827			Lilliefors GOF Test		
31						5% Lilliefors Critical Value	0.137			Detected Data appear Normal at 5% Significance Level		
32						Detected Data appear Normal at 5% Significance Level						
33												
34						Kaplan Meier (KM) Background Statistics Assuming Normal Distribution						
35						Mean	2.863			SD		0.724
36						95% UTL95% Coverage	4.381			95% KM UPL (t)		4.095
37						90% KM Percentile (z)	3.791			95% KM Percentile (z)		4.054
38						99% KM Percentile (z)	4.547			95% KM USL		4.96
39												
40						DL/2 Substitution Background Statistics Assuming Normal Distribution						
41						Mean	2.845			SD		0.764
42						95% UTL95% Coverage	4.448			95% UPL (t)		4.146
43						90% Percentile (z)	3.825			95% Percentile (z)		4.102
44						99% Percentile (z)	4.623			95% USL		5.059
45						DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons						
46												
47						Gamma GOF Tests on Detected Observations Only						
48						A-D Test Statistic	0.262			Anderson-Darling GOF Test		
49						5% A-D Critical Value	0.748			Detected data appear Gamma Distributed at 5% Significance Level		
50						K-S Test Statistic	0.0737			Kolmogrov-Smirnoff GOF		

	A	B	C	D	E	F	G	H	I	J	K	L
51					5% K-S Critical Value	0.136	Detected data appear Gamma Distributed at 5% Significance Level					
52	**Detected data appear Gamma Distributed at 5% Significance Level**											
53												
54	**Gamma Statistics on Detected Data Only**											
55					k hat (MLE)	15.2				k star (bias corrected MLE)		14.13
56					Theta hat (MLE)	0.19				Theta star (bias corrected MLE)		0.204
57					nu hat (MLE)	1277				nu star (bias corrected)		1187
58					MLE Mean (bias corrected)	2.887						
59					MLE Sd (bias corrected)	0.768				95% Percentile of Chisquare (2k)		41.65
60												
61	**Gamma ROS Statistics using Imputed Non-Detects**											
62	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
63	GROS may not be used when kstar of detected data is small such as < 0.1											
64	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
65	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
66					Minimum	1.1				Mean		2.864
67					Maximum	4.85				Median		2.85
68					SD	0.729				CV		0.255
69					k hat (MLE)	14.8				k star (bias corrected MLE)		13.78
70					Theta hat (MLE)	0.193				Theta star (bias corrected MLE)		0.208
71					nu hat (MLE)	1273				nu star (bias corrected)		1186
72					MLE Mean (bias corrected)	2.864				MLE Sd (bias corrected)		0.771
73					95% Percentile of Chisquare (2k)	40.81				90% Percentile		3.886
74					95% Percentile	4.24				99% Percentile		4.957
75	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
76	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
77					WH	HW					WH	HW
78				95% Approx. Gamma UTL with 95% Coverage	4.662	4.713				95% Approx. Gamma UPL	4.262	4.291
79				95% Gamma USL	5.545	5.658						
80												
81	**The following statistics are computed using gamma distribution and KM estimates**											
82	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
83					k hat (KM)	15.64					nu hat (KM)	1345
84					WH	HW					WH	HW
85				95% Approx. Gamma UTL with 95% Coverage	4.653	4.705				95% Approx. Gamma UPL	4.254	4.285
86				95% Gamma USL	5.533	5.648						
87												
88	**Lognormal GOF Test on Detected Observations Only**											
89					Shapiro Wilk Test Statistic	0.919	**Shapiro Wilk GOF Test**					
90					5% Shapiro Wilk Critical Value	0.942	Data Not Lognormal at 5% Significance Level					
91					Lilliefors Test Statistic	0.0921	**Lilliefors GOF Test**					
92					5% Lilliefors Critical Value	0.137	Detected Data appear Lognormal at 5% Significance Level					
93	**Detected Data appear Approximate Lognormal at 5% Significance Level**											
94												
95	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
96					Mean in Original Scale	2.864				Mean in Log Scale		1.018
97					SD in Original Scale	0.729				SD in Log Scale		0.273
98					95% UTL95% Coverage	4.906				95% BCA UTL95% Coverage		4.01
99					95% Bootstrap (%) UTL95% Coverage	4.763				95% UPL (t)		4.404
100					90% Percentile (z)	3.927				95% Percentile (z)		4.336

	A	B	C	D	E	F	G	H	I	J	K	L
101					99% Percentile (z)	5.223					95% USL	6.103
102												
103					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
104					KM Mean of Logged Data	1.017					95% KM UTL (Lognormal)95% Coverage	4.903
105					KM SD of Logged Data	0.273					95% KM UPL (Lognormal)	4.4
106					95% KM Percentile Lognormal (z)	4.333					95% KM USL (Lognormal)	6.1
107												
108					**Background DL/2 Statistics Assuming Lognormal Distribution**							
109					Mean in Original Scale	2.845					Mean in Log Scale	1.005
110					SD in Original Scale	0.764					SD in Log Scale	0.302
111					95% UTL95% Coverage	5.15					95% UPL (t)	4.569
112					90% Percentile (z)	4.025					95% Percentile (z)	4.492
113					99% Percentile (z)	5.519					95% USL	6.558
114					**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**							
115												
116					**Nonparametric Distribution Free Background Statistics**							
117					**Data appear to follow a Discernible Distribution at 5% Significance Level**							
118												
119					**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**							
120					Order of Statistic, r	43					95% UTL with95% Coverage	4.85
121					Approximate f	2.263					Confidence Coefficient (CC) achieved by UTL	0.89
122					95% UPL	4.004					95% USL	4.85
123					95% KM Chebyshev UPL	6.055						
124												
125					Note: The use of USL to estimate a BTV is recommended only when the data set represents a background							
126					data set free of outliers and consists of observations collected from clean unimpacted locations.							
127					The use of USL tends to provide a balance between false positives and false negatives provided the data							
128					represents a background data set and when many onsite observations need to be compared with the BTV.							
129												
130	**Thallium BKG**											
131												
132					**General Statistics**							
133					Total Number of Observations	42					Number of Missing Observations	0
134					Number of Distinct Observations	24						
135					Number of Detects	19					Number of Non-Detects	23
136					Number of Distinct Detects	18					Number of Distinct Non-Detects	6
137					Minimum Detect	0.0756					Minimum Non-Detect	0.511
138					Maximum Detect	0.18					Maximum Non-Detect	2.2
139					Variance Detected	7.3409E-4					Percent Non-Detects	54.76%
140					Mean Detected	0.117					SD Detected	0.0271
141					Mean of Detected Logged Data	-2.172					SD of Detected Logged Data	0.231
142												
143					**Critical Values for Background Threshold Values (BTVs)**							
144					Tolerance Factor K (For UTL)	2.104					d2max (for USL)	2.887
145												
146					**Normal GOF Test on Detects Only**							
147					Shapiro Wilk Test Statistic	0.961					**Shapiro Wilk GOF Test**	
148					5% Shapiro Wilk Critical Value	0.901					Detected Data appear Normal at 5% Significance Level	
149					Lilliefors Test Statistic	0.127					**Lilliefors GOF Test**	
150					5% Lilliefors Critical Value	0.203					Detected Data appear Normal at 5% Significance Level	

	A	B	C	D	E	F	G	H	I	J	K	L
151	**Detected Data appear Normal at 5% Significance Level**											
152												
153	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
154					Mean	0.117				SD		0.0264
155					95% UTL95% Coverage	0.172				95% KM UPL (t)		0.162
156					90% KM Percentile (z)	0.151				95% KM Percentile (z)		0.16
157					99% KM Percentile (z)	0.178				95% KM USL		0.193
158												
159	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
160					Mean	0.447				SD		0.358
161					95% UTL95% Coverage	1.201				95% UPL (t)		1.057
162					90% Percentile (z)	0.906				95% Percentile (z)		1.036
163					99% Percentile (z)	1.281				95% USL		1.482
164	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
165												
166	**Gamma GOF Tests on Detected Observations Only**											
167					A-D Test Statistic	0.259				**Anderson-Darling GOF Test**		
168					5% A-D Critical Value	0.74				Detected data appear Gamma Distributed at 5% Significance Level		
169					K-S Test Statistic	0.125				**Kolmogrov-Smirnoff GOF**		
170					5% K-S Critical Value	0.198				Detected data appear Gamma Distributed at 5% Significance Level		
171	**Detected data appear Gamma Distributed at 5% Significance Level**											
172												
173	**Gamma Statistics on Detected Data Only**											
174					k hat (MLE)	19.98				k star (bias corrected MLE)		16.86
175					Theta hat (MLE)	0.00585				Theta star (bias corrected MLE)		0.00693
176					nu hat (MLE)	759.1				nu star (bias corrected)		640.6
177					MLE Mean (bias corrected)	0.117						
178					MLE Sd (bias corrected)	0.0285				95% Percentile of Chisquare (2k)		48.26
179												
180	**Gamma ROS Statistics using Imputed Non-Detects**											
181	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
182	GROS may not be used when kstar of detected data is small such as < 0.1											
183	For such situations, GROS method tends to yield inflated values of UCLs and BTVs											
184	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
185					Minimum	0.0756				Mean		0.117
186					Maximum	0.18				Median		0.116
187					SD	0.0234				CV		0.201
188					k hat (MLE)	25.54				k star (bias corrected MLE)		23.73
189					Theta hat (MLE)	0.00456				Theta star (bias corrected MLE)		0.00491
190					nu hat (MLE)	2145				nu star (bias corrected)		1993
191					MLE Mean (bias corrected)	0.117				MLE Sd (bias corrected)		0.0239
192					95% Percentile of Chisquare (2k)	64.54				90% Percentile		0.148
193					95% Percentile	0.158				99% Percentile		0.179
194	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
195	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
196					WH	HW					WH	HW
197				95% Approx. Gamma UTL with 95% Coverage	0.171	0.172				95% Approx. Gamma UPL	0.159	0.16
198				95% Gamma USL	0.196	0.198						
199												
200	**The following statistics are computed using gamma distribution and KM estimates**											

	A	B	C	D	E	F	G	H	I	J	K	L
201	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
202					k hat (KM)	19.65					nu hat (KM)	1651
203					WH	HW					WH	HW
204	95% Approx. Gamma UTL with 95% Coverage				0.178	0.179	95% Approx. Gamma UPL				0.165	0.165
205				95% Gamma USL	0.207	0.209						
206												
207	**Lognormal GOF Test on Detected Observations Only**											
208				Shapiro Wilk Test Statistic		0.974	**Shapiro Wilk GOF Test**					
209				5% Shapiro Wilk Critical Value		0.901	Detected Data appear Lognormal at 5% Significance Level					
210				Lilliefors Test Statistic		0.113	**Lilliefors GOF Test**					
211				5% Lilliefors Critical Value		0.203	Detected Data appear Lognormal at 5% Significance Level					
212	**Detected Data appear Lognormal at 5% Significance Level**											
213												
214	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
215				Mean in Original Scale		0.116			Mean in Log Scale			-2.172
216				SD in Original Scale		0.0234			SD in Log Scale			0.2
217				95% UTL95% Coverage		0.174			95% BCA UTL95% Coverage			0.179
218				95% Bootstrap (%) UTL95% Coverage		0.179			95% UPL (t)			0.16
219				90% Percentile (z)		0.147			95% Percentile (z)			0.158
220				99% Percentile (z)		0.182			95% USL			0.203
221												
222	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
223				KM Mean of Logged Data		-2.172			95% KM UTL (Lognormal)95% Coverage			0.183
224				KM SD of Logged Data		0.225			95% KM UPL (Lognormal)			0.167
225				95% KM Percentile Lognormal (z)		0.165			95% KM USL (Lognormal)			0.218
226												
227	**Background DL/2 Statistics Assuming Lognormal Distribution**											
228				Mean in Original Scale		0.447			Mean in Log Scale			-1.197
229				SD in Original Scale		0.358			SD in Log Scale			0.949
230				95% UTL95% Coverage		2.224			95% UPL (t)			1.52
231				90% Percentile (z)		1.019			95% Percentile (z)			1.439
232				99% Percentile (z)		2.747			95% USL			4.679
233	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
234												
235	**Nonparametric Distribution Free Background Statistics**											
236	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
237												
238	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
239				Order of Statistic, r		42			95% UTL with95% Coverage			2.2
240				Approximate f		2.211			Confidence Coefficient (CC) achieved by UTL			0.884
241				95% UPL		2.2			95% USL			2.2
242				95% KM Chebyshev UPL		0.233						
243												
244	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
245	data set free of outliers and consists of observations collected from clean unimpacted locations.											
246	The use of USL tends to provide a balance between false positives and false negatives provided the data											
247	represents a background data set and when many onsite observations need to be compared with the BTV.											
248												